USER'S MANUAL

notebook

V13.3.00

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R&TTE Directive

This device is in compliance with the essential requirements and other relevant provisions of the R&TTE Directive 1999/5/EC.

This device will be sold in the following EEA countries: Austria, Italy, Belgium, Liechtenstein, Denmark, Luxembourg, Finland, Netherlands, France, Norway, Germany, Portugal, Greece, Spain, Iceland, Sweden, Ireland, United Kingdom, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Slovakia, Poland, Slovenia.

ErP Off Mode Power Consumption Statement:

The figures below note the power consumption of this computer in compliance with European Commission (EC) regulations on power consumption in off mode

- Off Mode < 0.5W

CE Marking

This device has been tested to and conforms to the regulatory requirements of the European Union and has attained CE Marking. The CE Mark is a conformity marking consisting of the letters “CE”. The CE Mark applies to products regulated by certain European health, safety and environmental protection legislation. The CE Mark is obligatory for products it applies to: the manufacturer affixes the marking in order to be allowed to sell his product in the European market.

This product conforms to the essential requirements of the R&TTE directive 1999/5/EC in order to attain CE Marking. A notified body has determined that this device has properly demonstrated that the requirements of the directive have been met and has issued a favorable certificate of expert opinion. As such the device will bear the notified body number 0560 after the CE mark.

The CE Marking is not a quality mark. Foremost, it refers to the safety rather than to the quality of a product. Secondly, CE Marking is mandatory for the product it applies to, whereas most quality markings are voluntary.

FCC Statement
(Federal Communications Commission)

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re orient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the service representative or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

1. This device may not cause interference.

   And

2. This device must accept any interference, including interference that may cause undesired operation of the device.

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Warning

Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the manufacturer for compliance with the above standards could void your authority to operate the equipment.

IMPORTANT SAFETY INSTRUCTIONS

Follow basic safety precautions, including those listed below, to reduce the risk of fire, electric shock, and injury to persons when using any electrical equipment:

1. Do not use this product near water, for example near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement or near a swimming pool.
2. Avoid using this equipment with a telephone line (other than a cordless type) during an electrical storm. There may be a remote risk of electrical shock from lightning.
3. Do not use the telephone to report a gas leak in the vicinity of the leak.
4. Use only the power cord and batteries indicated in this manual. Do not dispose of batteries in a fire. They may explode. Check with local codes for possible special disposal instructions.
5. This product is intended to be supplied by a Listed Power Unit:

- Full Range AC/DC Adapter - AC Input 100 - 240V, 50 - 60Hz, DC Output 19.5V, 6.15A (**120W**) minimum.

This Computer's Optical Device is a Laser Class 1 Product

Instructions for Care and Operation

The notebook computer is quite rugged, but it can be damaged. To prevent this, follow these suggestions:

1. **Don't drop it, or expose it to shock.** If the computer falls, the case and the components could be damaged.

Do not expose the computer to any shock or vibration.	*Do not place it on an unstable surface.*	*Do not place anything heavy on the computer.*

2. **Keep it dry, and don't overheat it.** Keep the computer and power supply away from any kind of heating element. This is an electrical appliance. If water or any other liquid gets into it, the computer could be badly damaged.

Do not expose it to excessive heat or direct sunlight.	*Do not leave it in a place where foreign matter or moisture may affect the system.*	*Don't use or store the computer in a humid environment.*	*Do not place the computer on any surface that will block the Vents/Fan Intakes.*

3. **Avoid interference.** Keep the computer away from high capacity transformers, electric motors, and other strong magnetic fields. These can hinder proper performance and damage your data.

4. **Follow the proper working procedures for the computer.** Shut the computer down properly and don't forget to save your work. Remember to periodically save your data as data may be lost if the battery is depleted.

Do not turn off the power until you properly shut down all programs.	*Do not turn off any peripheral devices when the computer is on.*	*Do not disassemble the computer by yourself.*	*Perform routine maintenance on your computer.*

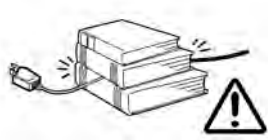
5. **Take care when using peripheral devices**.

Use only approved brands of peripherals.	*Unplug the power cord before attaching peripheral devices.*

Power Safety

The computer has specific power requirements:

- Only use a power adapter approved for use with this computer.
- Your AC/DC adapter may be designed for international travel but it still requires a steady, uninterrupted power supply. If you are unsure of your local power specifications, consult your service representative or local power company.
- The power adapter may have either a 2-prong or a 3-prong grounded plug. The third prong is an important safety feature; do not defeat its purpose. If you do not have access to a compatible outlet, have a qualified electrician install one.
- When you want to unplug the power cord, be sure to disconnect it by the plug head, not by its wire.
- Make sure the socket and any extension cord(s) you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supplies (i.e. AC/DC adapter or car adapter).

Do not plug in the power cord if you are wet.	*Do not use the power cord if it is broken.*	*Do not place heavy objects on the power cord.*
		

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines and power cord).

You must also remove your battery in order to prevent accidentally turning the machine on. **Before removing the battery disconnect the AC/DC adapter from the computer.**

Polymer Battery Precautions

Note the following information which is specific to polymer batteries only, and where applicable, this overrides the general battery precaution information overleaf.

- Polymer batteries may experience a slight expansion or swelling, however this is part of the battery's safety mechanism and is not a cause for concern.
- Use proper handling procedures when using polymer batteries. Do not use polymer batteries in high ambient temperature environments, and do not store unused batteries for extended periods.

See also the general battery precautionary information overleaf for further information.

General Battery Precautions

- Only use batteries designed for this computer. The wrong battery type may explode, leak or damage the computer.
- Do not remove any batteries from the computer while it is powered on.
- Do not continue to use a battery that has been dropped, or that appears damaged (e.g. bent or twisted) in any way. Even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire.
- If you do not use the battery for an extended period, then remove the battery from the computer for storage.
- Recharge the batteries using the notebook's system. Incorrect recharging may make the battery explode.
- Do not try to repair a battery pack. Refer any battery pack repair or replacement to your service representative or qualified service personnel.
- Keep children away from, and promptly dispose of a damaged battery. Always dispose of batteries carefully. Batteries may explode or leak if exposed to fire, or improperly handled or discarded.
- Keep the battery away from metal appliances.
- Affix tape to the battery contacts before disposing of the battery.
- Do not touch the battery contacts with your hands or metal objects.

Battery Disposal & Caution

The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Cleaning

Do not apply cleaner directly to the computer; use a soft clean cloth.
Do not use volatile (petroleum distillates) or abrasive cleaners on any part of the computer.

Servicing

Do not attempt to service the computer yourself. Doing so may violate your warranty and expose you and the computer to electric shock. Refer all servicing to authorized service personnel. Unplug the computer from the power supply. Then refer servicing to qualified service personnel under any of the following conditions:

- When the power cord or AC/DC adapter is damaged or frayed.
- If the computer has been exposed to rain or other liquids.
- If the computer does not work normally when you follow the operating instructions.
- If the computer has been dropped or damaged (do not touch the poisonous liquid if the LCD panel breaks).
- If there is an unusual odor, heat or smoke coming from your computer.

Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before restoring power to the system.

Also note the following when the cover is removed:

- Hazardous moving parts.
- Keep away from moving fan blades.

Travel Considerations

Packing

As you get ready for your trip, run through this list to make sure the system is ready to go:

1. Check that the battery pack and any spares are fully charged.
2. Power off the computer and peripherals.
3. Close the display panel and make sure it's latched.
4. Disconnect the AC/DC adapter and cables. Stow them in the carrying bag.
5. The AC/DC adapter uses voltages from 100 to 240 volts so you won't need a second voltage adapter. However, check with your travel agent to see if you need any socket adapters.
6. Put the notebook in its carrying bag and secure it with the bag's straps.
7. If you're taking any peripherals (e.g. a printer, mouse or digital camera), pack them and those devices' adapters and/or cables.
8. Anticipate customs - Some jurisdictions may have import restrictions or require proof of ownership for both hardware and software. Make sure your "papers" are handy.

Power Off Before Traveling

Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the Vents/Fan Intakes to be blocked. To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intakes while the computer is in use.

On the Road

In addition to the general safety and maintenance suggestions in this preface, and Chapter 8: Troubleshooting, keep these points in mind:

Hand-carry the notebook - For security, don't let it out of your sight. In some areas, computer theft is very common. Don't check it with "normal" luggage. Baggage handlers may not be sufficiently careful. Avoid knocking the computer against hard objects.

Beware of Electromagnetic fields - Devices such as metal detectors & X-ray machines can damage the computer, hard disk, floppy disks, and other media. They may also destroy any stored data - Pass your computer and disks around the devices. Ask security officials to hand-inspect them (you may be asked to turn it on). **Note**: Some airports also scan luggage with these devices.

Fly safely - Most airlines have regulations about the use of computers and other electronic devices in flight. These restrictions are for your safety, follow them. If you stow the notebook in an overhead compartment, make sure it's secure. Contents may shift and/or fall out when the compartment is opened.

Get power where you can - If an electrical outlet is available, use the AC/DC adapter and keep your battery(ies) charged.

Keep it dry - If you move quickly from a cold to a warm location, water vapor can condense inside the computer. Wait a few minutes before turning it on so that any moisture can evaporate.

Developing Good Work Habits

Developing good work habits is important if you need to work in front of the computer for long periods of time. Improper work habits can result in discomfort or serious injury from repetitive strain to your hands, wrists or other joints. The following are some tips to reduce the strain:

- Adjust the height of the chair and/or desk so that the keyboard is at or slightly below the level of your elbow. Keep your forearms, wrists, and hands in a relaxed position.
- Your knees should be slightly higher than your hips. Place your feet flat on the floor or on a footrest if necessary.
- Use a chair with a back and adjust it to support your lower back comfortably.
- Sit straight so that your knees, hips and elbows form approximately 90-degree angles when you are working.
- Take periodic breaks if you are using the computer for long periods of time.

Remember to:

- Alter your posture frequently.
- Stretch and exercise your body several times a day.
- Take periodic breaks when you work at the computer for long periods of time. Frequent and short breaks are better than fewer and longer breaks.

Lighting

Proper lighting and a comfortable viewing angle can reduce eye strain and shoulder and neck muscle fatigue.

- Position the display to avoid glare or reflections from overhead lighting or outside sources of light.
- Keep the display screen clean and set the brightness and contrast to levels that allow you to see the screen clearly.
- Position the display directly in front of you at a comfortable viewing distance.
- Adjust the display-viewing angle to find the best position.

LCD Screen Care

To prevent **image persistence** on LCD monitors (caused by the continuous display of graphics on the screen for an extended period of time) take the following precautions:

- Set the *Windows* **Power Plans** to turn the screen off after a few minutes of screen idle time.
- Use a rotating, moving or blank screen saver (this prevents an image from being displayed too long).
- Rotate desktop background images every few days.
- Turn the monitor off when the system is not in use.

LCD Electro-Plated Logos

Note that in computers featuring a raised LCD electro-plated logo, the logo is covered by a protective adhesive. Due to general wear and tear, this adhesive may deteriorate over time and the exposed logo may develop sharp edges. Be careful when handling the computer in this case, and avoid touching the raised LCD electro-plated logo. Avoid placing any other items in the carrying bag which may rub against the top of the computer during transport. If any such wear and tear develops contact your distributor/supplier.

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Chapter 1: Quick Start Guide

Overview

This Quick Start Guide is a brief introduction to the basic features of your computer, to navigating around the computer and to getting your system started. The remainder of the manual covers the following:

- **Chapter 2** A guide to using some of the main features of the computer e.g. the **storage devices** (**hard disk**, **optical device**, **card reader**), **TouchPad** & **Mouse** & **Audio Features**.
- **Chapter 3** The computer's **power** management options.
- **Chapter 4** The installation of the **drivers** and utilities essential to the operation or improvement of some of the computer's subsystems.
- **Chapter 5** An outline of the computer's built-in software or **BIOS** (Basic Input Output System).
- **Chapter 6** Instructions for **upgrading** your computer.
- **Chapter 7** A quick guide to the computer's **PC Camera, Wireless LAN, Fingerprint, Bluetooth & WLAN Combo, Intel technology, Sound Blaster Audio** and **3G** modules (some of which may be **optional** depending on your purchase configuration).
- **Chapter 8** A **troubleshooting** guide.
- **Appendix A** Definitions of the **interface**, **ports**/**jacks** which allow your computer to communicate with external devices.
- **Appendix B** Information on the **Control Center**.
- **Appendix C** Information on the **Video driver** controls.
- **Appendix D** The computer's **specification**.

Advanced Users

If you are an advanced user you may skip over most of this Quick Start Guide. However you may find it useful to refer to *"Drivers & Utilities" on page 4 - 1*, *"BIOS Utilities" on page 5 - 1* and *"Upgrading The Computer" on page 6 - 1* in the User's Manual. You may also find the notes marked with a ✎ of interest to you.

Notes

Check the light colored boxes with the mark above to find detailed information about the computer's features.

Beginners and Not-So-Advanced Users

If you are new to computers (or do not have an advanced knowledge of them) then the information contained in this Quick Start Guide should be enough to get you up and running. Eventually you should try to look through all the documentation (more detailed descriptions of the functions, setup and system controls are covered in the remainder of the User's Manual), but do not worry if you do not understand everything the first time. Keep this manual nearby and refer to it to learn as you go. You may find it useful to refer to the notes marked with a ✎ as indicated in the margin. For a more detailed description of any of the interface ports and jacks see *"Interface (Ports & Jacks)" on page A - 1*.

Warning Boxes

No matter what your level please pay careful attention to the warning and safety information indicated by the symbol. Also please note the safety and handling instructions as indicated in the *Preface*.

Not Included

Operating Systems (e.g. ***Windows 8***) and applications (e.g. word processing, spreadsheet and database programs) have their own manuals, so please consult the appropriate manuals.

Drivers

If you are installing new system software, or are re-configuring your computer for a different system, you will need to install the appropriate drivers. Drivers are programs which act as an interface between the computer and a hardware component e.g. a wireless network module. It is very important that you install the drivers in the order listed in ***Table 4 - 1, on page 4 - 3***. You will be unable to use most advanced controls until the necessary drivers and utilities are properly installed. If your system hasn't been properly configured (your service representative may have already done that for you), refer to ***"Drivers & Utilities" on page 4 - 1*** for installation instructions.

Ports and Jacks

See ***"Ports and Jacks" on page A - 2*** for a description of the interface (ports & jacks) which allow your computer to communicate with external devices, connect to the internet etc.

System Software

Your computer may already come with system software pre-installed. Where this is not the case, or where you are re-configuring your computer for a different system, you will find the ***Windows 8*** operating system is supported.

Note: In order to run ***Windows 8*** without limitations or decreased performance, your computer requires a minimum **1GB** of system memory (RAM).

Windows 8 OS

In order to run ***Windows 8 (32 Bit)*** without limitations or decreased performance, your computer requires a minimum **1GB** of system memory (RAM), however if you are running ***Windows 8 (64 bit)*** your computer requires a minimum **2GB** of system memory (RAM).

Model Differences

This notebook series includes **two** different model types that mainly differ as indicated in the table below. Note that your model may appear slightly different from those pictured in this manual.

Feature	Model A	Model B
Display Type Supported	15.6” (39.62cm) HD+ (1600 * 900) / FHD (1920 * 1080) 16:9 LCD Panel	17.3” (43.94cm) HD+ (1600 * 900) / FHD (1920 * 1080) 16:9 LCD Panel
3G Module	UMTS/HSPDA **OR** UMTS/HSPDA+ based **3G Module** with Mini-Card Interface (**Factory Option**)	N/A
Fingerprint Reader Module	Supported	Not Supported
Dimensions & Weight	374mm (w) * 250mm (d) * 16.3 - 42.7mm (h) 2.7kg with ODD and Battery	413mm (w) * 277.5mm (d) * 17.5 - 44mm (h) 3.2kg with ODD and Battery

Table 1 - 1 **- Model Differences**

System Startup

1. Remove all packing materials and place the computer on a stable surface.
2. Securely attach any peripherals you want to use with the notebook (e.g. keyboard and mouse) to their ports.
3. Attach the AC/DC adapter to the DC-In jack at the rear of the computer, then plug the AC power cord into an outlet, and connect the AC power cord to the AC/DC adapter.
4. Use one hand to raise the lid/LCD to a comfortable viewing angle (**do not exceed 135 degrees**); use the other hand (as illustrated in ***Figure 1 - 1*** below) to support the base of the computer (**Note**: **Never** lift the computer by the lid/LCD).
5. Press the power button on the top right of the computer **for about 2 - 3** seconds to turn the computer "**on**" (note that the **power LED** on the front of the computer **will turn from orange to green** when the computer powers on).

Shutdown

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Power** item in **Settings** in the **Charms Bar** (use the **Windows Logo Key + C** key combination to access the **Charms Bar**) in **Windows 8**. This will help prevent hard disk or system problems.

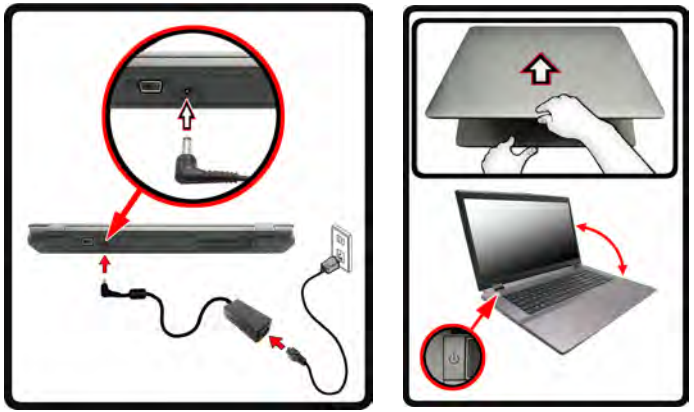


Figure 1 - 1 **- Opening the Lid/LCD & Computer with AC/DC Adapter Plugged-In**

System Map: LCD Panel Open - Model A

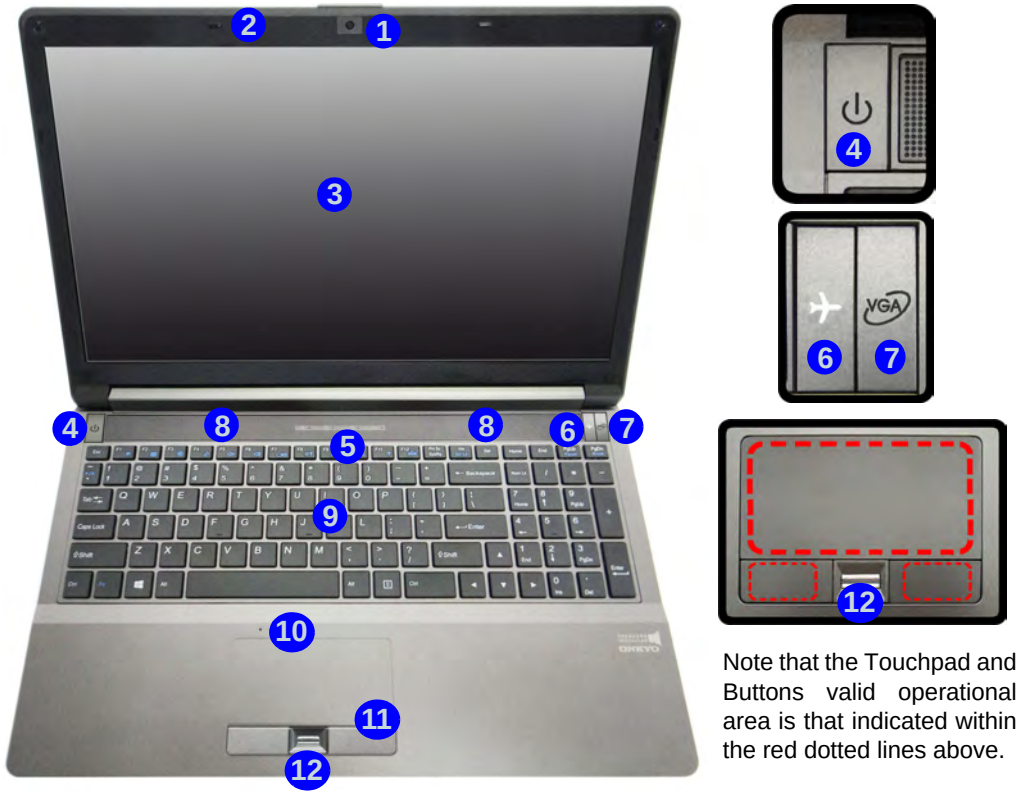


Figure 1 - 2
LCD Panel Open - Model A

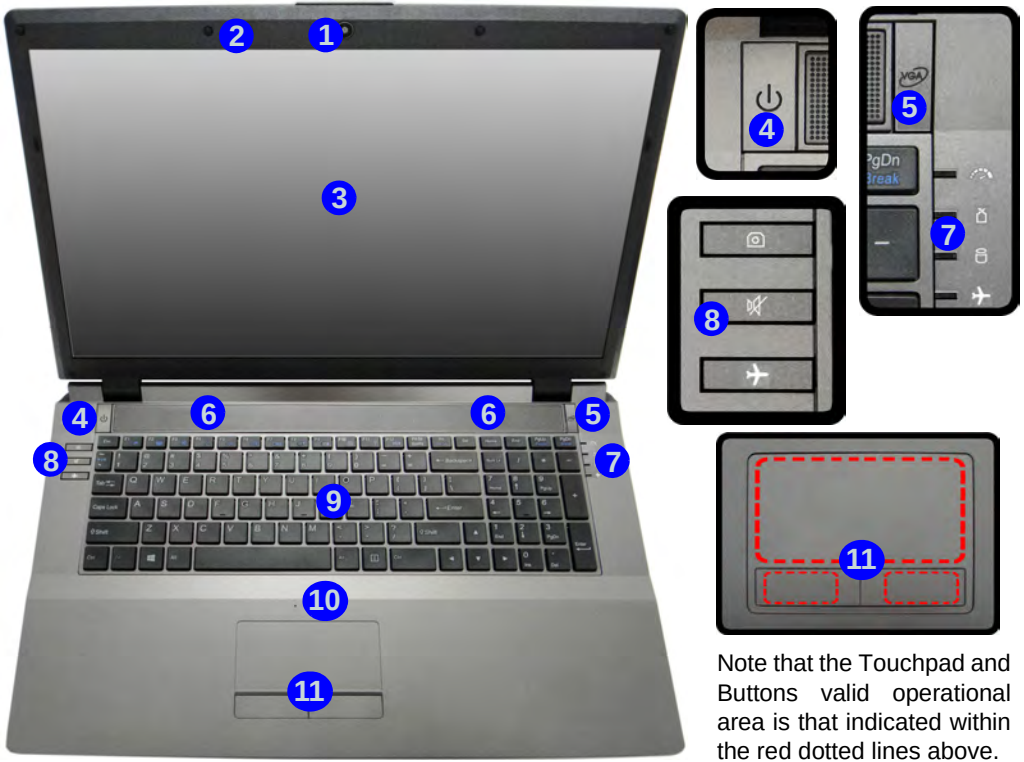
1. Built-In PC Camera
2. PC Camera LED
3. LCD
4. Power Button
5. Top Case LED Indicators
6. Airplane Mode Button
7. GPU Button
8. Speakers
9. Keyboard
10. Built-In Microphone
11. Touchpad & Buttons
12. Fingerprint Reader Sensor (**Factory Option**)

Note that the Touchpad and Buttons valid operational area is that indicated within the red dotted lines above.

System Map: LCD Panel Open - Model B

Figure 1 - 3
LCD Panel Open - Model B

1. Built-In PC Camera
2. PC Camera LED
3. LCD
4. Power Button
5. GPU Button
6. Speakers
7. Top Case LED Indicators
8. Hot Key Buttons
9. Keyboard
10. Built-In Microphone
11. Touchpad & Buttons



Note that the Touchpad and Buttons valid operational area is that indicated within the red dotted lines above.

LED Indicators

The LED indicators on the computer display helpful information about the current status of the computer.

Icon	Color	Description	Icon	Color	Description
	Orange	AC/DC Power is Plugged In		Green	Number Lock is Activated (press Num Lk)
	Green	The Computer is On		Green	Caps Lock is Activated (press Caps Lock)
	Blinking Green	The Computer is in Sleep Mode		Green	Scroll Lock is Activated (press Fn + Scr Lk)
	Orange	The Battery is Charging			
	Green	The Battery is Fully Charged			
	Blinking Orange	The Battery Has Reached Critically Low Power Status			

Table 1 - 2 **- Front Left LED Indicators**

See overleaf for information on the Top Case LED indicators.

Icon	Color	Description
	Green	UMA Mode Activated (GPU Button)
	Orange	Optimus Mode Activated (GPU Button)
	Orange	NVIDIA Discrete GPU (**dGPU**) Activated
	Green	Intel Integrated GPU (**iGPU**) Activated
	White	Hard Disk/ODD Activity
	Green	**Airplane Mode** is **ON** (the WLAN, Bluetooth & 3G Modules are OFF)
	White	The Computer is Powered On

Table 1 - 3 **- Top Case LED Indicators**

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the **3G/WLAN/ Bluetooth** module(s) are OFF if you are using the computer aboard aircraft. Use **Airplane Mode** hot key to toggle Airplane Mode On/Off, and check the LED indicator for the power status.

Hot Key Buttons (Model B)

Press the hot key buttons on the computer to toggle the appropriate function on/off.

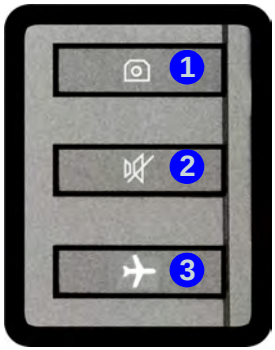
Icon	Color	Description	
	Green	UMA Mode Activated (GPU Button)	
	Orange	Optimus Mode Activated (GPU Button)	
1		Power On/Off the (**optional**) PC Camera	
2		Mute On/Off	
3		Turn On/Off Airplane Mode	
		Power the Computer On/Off	

Table 1 - 4 **- Hot Key Buttons**

Note that **Model A** supports only the GPU , Airplane Mode & Power hot key buttons (see ***"System Map: LCD Panel Open - Model A" on page 1 - 7***).

Other Keyboards

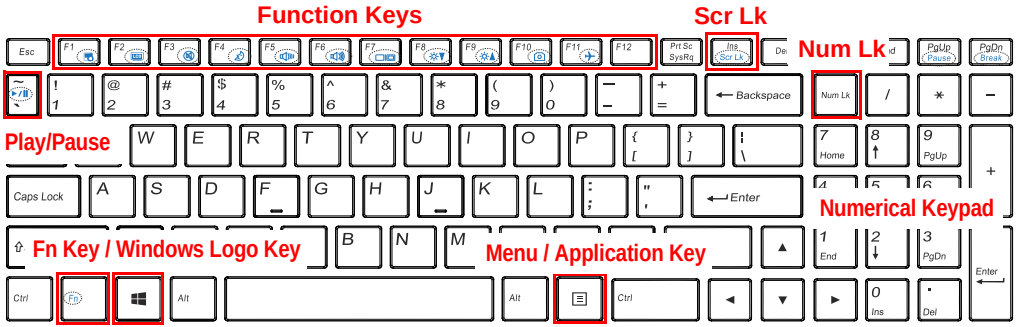
If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot-keys unique to the system's regular keyboard may not work.

Num Lk & Scr Lk

Hold down the **Fn Key** and either Num Lk or Scr Lk to enable number or scroll lock, and check the LED indicator for status.

Keyboard

The keyboard has an embedded numerical keypad for easy numeric data input, and features function keys to allow you to change operational features instantly.



Special Characters

Some software applications allow the number-keys to be used with Alt to produce special characters. These special characters can only be produced by using the numeric keypad. Regular number keys (in the upper row of the keyboard) will not work. Make sure that Num Lk is on.

Figure 1 - 4 **- Keyboard**

Keyboard Shortcuts

The following Windows Logo Key (Winkey) keyboard shortcuts are useful for navigation/operation in ***Windows 8***.

Windows Logo Key +	Description
Tap Winkey	Toggle between the **Start** screen and the foremost running app or the ***Windows*** **Desktop**
C	Display **Charms** menu
D	Switch to the ***Windows*** **Desktop** and toggle show Desktop
E	Switch to the Windows desktop and launch **Windows Explorer** with **Computer** displayed
F	Display file **Search**
I	Open the **Settings** charm
K	Open the **Connect** charm
L	Lock the computer and display the **Lock screen**
P	Display the **Second Screen** menu (see ***Figure 1 - 22 on page 1 - 32***)
R	Switch to the ***Windows*** **Desktop** and display the **Run** dialog box
Z	Access the **App Bar** (see ***Figure 1 - 14 on page 1 - 24***)

Table 1 - 5 **- Keyboard Shortcuts**

Windows Logo Keyboard Shortcut

Use the Windows logo key **+ D key combination** to switch between the Start screen and Windows Desktop.

Menu/Application Keyboard Shortcut

When the Desktop app is running you can use the Menu/Application key on the keyboard to display the context menu as per a mouse right-click. In the Start screen this function is useful to quickly display the **All Apps** icon.

Function Keys & Visual Indicators

The **function keys** (F1 - F12 etc.) will act as **hot keys** when pressed while the **Fn** key is held down. Visual indicators (see the table below) are available when the Hot Key driver is installed.

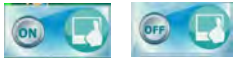
Keys	Function/Visual Indicators	Keys	Function/Visual Indicators
Fn + ~	Play/Pause (in Audio/Video Programs)	Fn +F5/F6	Volume Decrease/Increase
Fn + Esc	**Control Center** Toggle (see over)	Fn + F7	Display Toggle
Fn + F1	Touchpad Toggle 	Fn +F8/F9	Brightness Decrease/Increase
Fn + F2	Turn LCD Backlight Off (Press a key to or use Touchpad to turn on)	Fn + F10	PC Camera Power Toggle
Fn + F3	Mute Toggle	Fn + F11	Airplane Mode Toggle
Fn + F4	Sleep Toggle		
See also *Table 1 - 2, on page 1 - 9* for **Number Lock**, **Caps Lock** and **Scroll Lock** indicators			

Table 1 - 6 **- Function Keys & Visual Indicators**

Control Center

When in the ***Windows*** **Desktop app** (not in the **Start** screen) press the **Fn + Esc** key combination, or **double-click the icon** in the **notification area of the taskbar** to toggle the **Control Center** on/off. The **Control Center** gives quick access to frequently used controls and enables you to quickly turn the camera/Touch Pad on/off (see ***Appendix B*** for full details).

Control Center

Click on any button to turn any of the modules (e.g. TouchPad, Camera) on/off.

Click on the power conservation modes to switch between Performance, Balanced or Energy Star modes (see page ***3 - 11***). To remove the Power Conservation Modes screen just click in a blank area of the icon or press a key on the keyboard.

Click on the buttons (or just click and hold the mouse button) to adjust the slider for Brightness/Volume.

Click on Display Switch and click to choose a display mode from the menu (see page ***C - 24***).

Figure 1 - 5 **- Control Center**

System Map: Front & Left Views

Figure 1 - 6
Front & Left Views

1. LED Indicators
2. Security Lock Slot
3. USB 2.0 Port
4. S/PDIF-Out Jack
5. Microphone-In Jack
6. Headphone-Out Jack
7. Optical Device Drive Bay

Sound Blaster Cinema Audio

Note that **you will need to install the Sound Blaster audio application in order to get maximum audio performance.**

CD/DVD Emergency Eject

If you need to manually eject a CD/DVD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. Do not use a sharpened pencil or any object that may break and become lodged in the hole. Don't try to remove a floppy disk/CD/DVD while the system is accessing it. This may cause the system to "crash".

Disk Eject Warning

Don't try to eject a CD/DVD while the system is accessing it. This may cause the system to "crash". Stop the disk first then eject it, or press the stop button twice.

System Map: Right & Rear Views

Figure 1 - 7
Right & Rear Views

1. Multi-In-1 Card Reader
2. 2 * USB 3.0 Ports
3. Combined eSATA/ USB 3.0 Port
4. HDMI-Out Port
5. RJ-45 LAN Jack
6. External Monitor Port
7. DC-In Jack
8. Vent/Fan Intake

Multi-In-1 Card Reader

The card reader allows you to use the most popular digital storage card formats:

MMC (MultiMedia Card) / RS MMC
SD (Secure Digital) / Mini SD / SDHC / SDXC
MS (Memory Stick) / MS Pro / MS Duo

The card reader features a push-in/push-out card insertion and ejection mechanism. Simply push the card to insert and eject it, however Ms Duo cards require an adapter.

USB 3.0 Port OR USB 2.0 Port

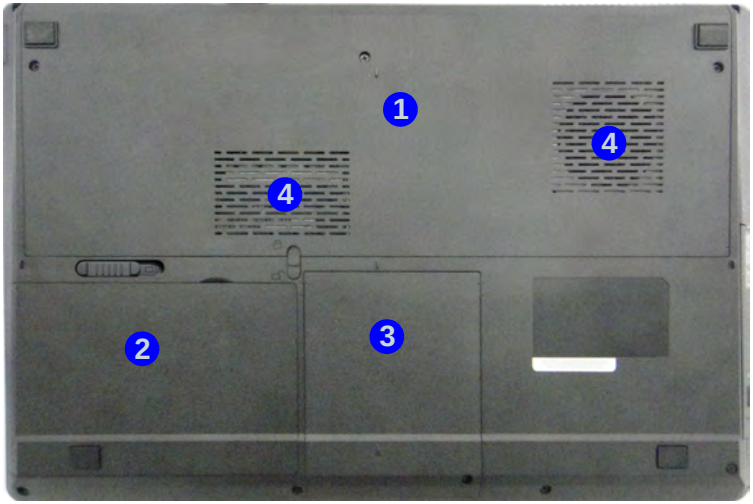
This model includes 1 * USB 2.0 port and 3 * USB 3.0 ports (including one combo e-SATA/ USB 3.0 port). USB 3.0 ports are denoted by their **blue color**; USB 2.0 ports are colored black.

HDMI Port

Note that the HDMI Port supports video and audio signals to attached external displays. Note that Sound Blaster audio will be disabled when you are connecting to an external display through an HDMI connection (see page ***7 - 80***).

System Map: Bottom View - Model A

Figure 1 - 8
Bottom View
Model A



1. Component Bay Cover
2. Battery
3. Primary HDD Bay
4. Fan Outlet/Intake

Battery Information

Always completely discharge, then fully charge, a new battery before using it. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges. See ***"Battery Information" on page 3 - 12*** for full instructions.

CPU

The CPU is not a user serviceable part.

Overheating

To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intake while the computer is in use.

System Map: Bottom View - Model B

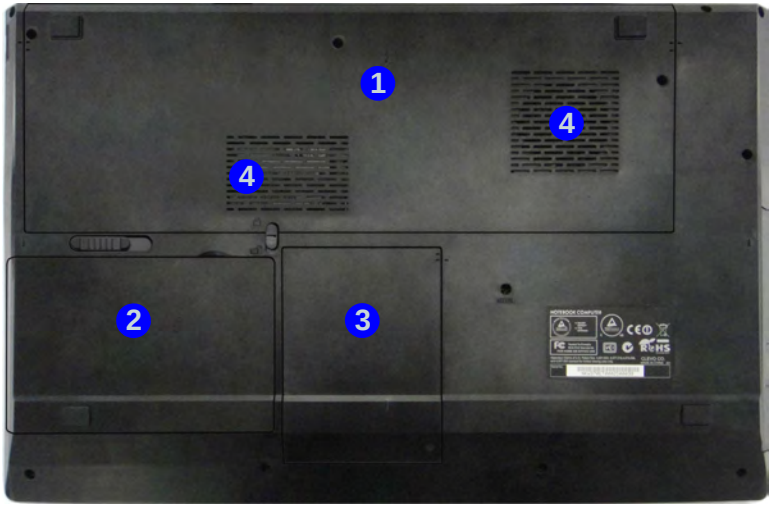


Figure 1 - 9
Bottom View

1. Component Bay Cover
2. Battery
3. Primary HDD Bay
4. Fan Outlet/Intake

CPU

The CPU is not a user serviceable part.

Overheating

To prevent your computer from overheating make sure nothing blocks the Vent/Fan Intake while the computer is in use.

Battery Information

Always completely discharge, then fully charge, a new battery before using it. Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges. See ***"Battery Information" on page 3 - 13*** for full instructions.

Windows Control Panel

Throughout this manual you will see an instruction to open the **Control Panel**. In ***Windows 8*** right-click the lower left hot corner to bring up the context menu (or use the **Windows Logo Key** + **X** key combination) and select **Control Panel**.

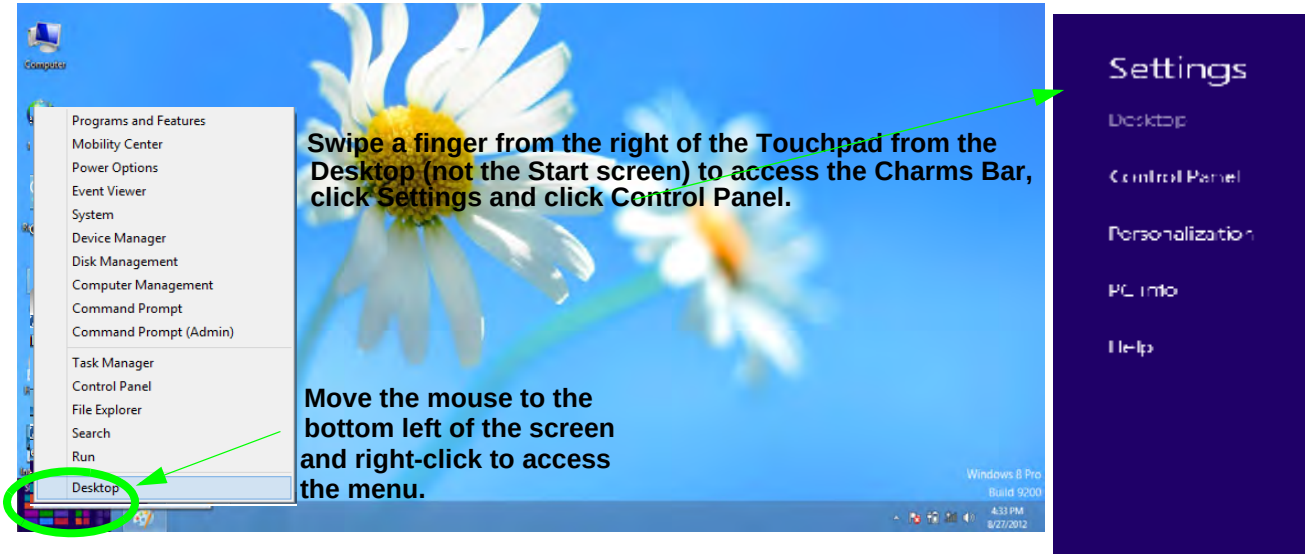


Figure 1 - 10 **- Windows 8 Context Menu & Charms Bar Settings (from Desktop App)**

Windows 8 Start Screen & Desktop

The Apps, control panels, utilities and programs within ***Windows 8*** are accessed from the **Start screen** and/or ***Windows*** **Desktop app**. The **Desktop** (which runs as an app within the **Start** screen) can be accessed by clicking the **Desktop** item in the Start screen (or by using the **Windows Logo Key** + **D** key combination).

Figure 1 - 11 **- Windows Start Screen**

Apps & Tiles

The **Windows 8** Start screen will contain a number of apps, and many more will be installed as you add more applications etc. Not all of these apps can fit on one screen so you will often need use the **slider** at the bottom of the screen in order to view all the necessary Apps.

Accessing Pining/Unpinning All Apps

You can add and remove the tiles for apps and control panels in the Start **screen. Right-click on a blank area of the Start screen,** and you will see the **All Apps** icon. Click the **All Apps** icon to display all the installed applications etc. Right-click any icon to bring up the menu at the bottom of the screen and you can then click the appropriate icon to **pin the App** to (or unpin from) the **Start** screen, or to the **taskbar** in the **Desktop application**.

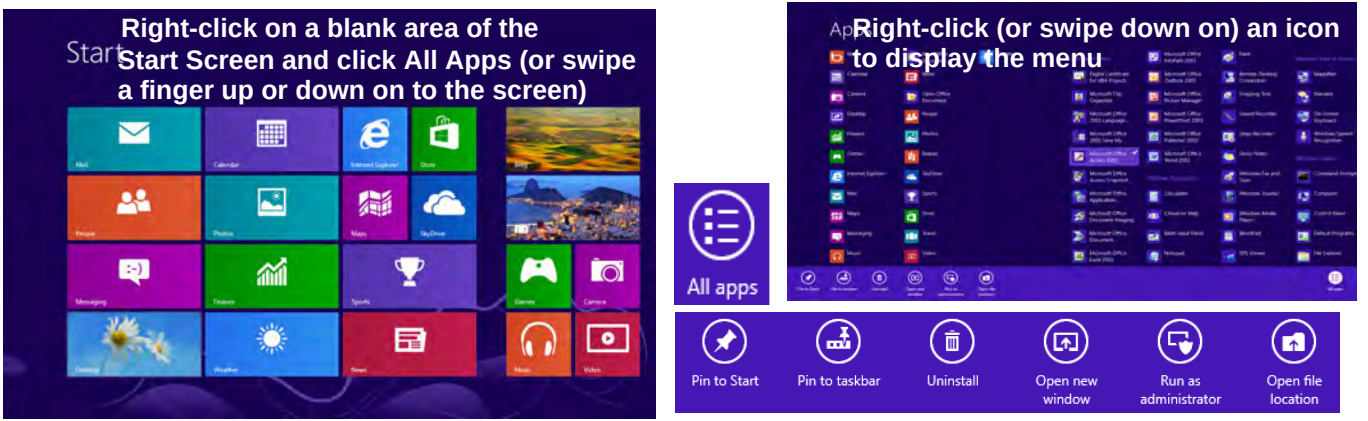

Right-click on a blank area of the Start Screen and click All Apps (or swipe a finger up or down on to the screen)
Start
Right-click (or swipe down on) an icon to display the menu
All apps
Pin to Start
Pin to taskbar
Uninstall
Open new window
Run as administrator
Open file location

Figure 1 - 12 **- All Apps**

Desktop Application

When the **Desktop** app is running (click the app in the Start screen or use the **Windows Logo Key** + **D** key combination) you can use lower left hot corner to switch between the Start screen and the ***Windows*** **Desktop** app. To do so move your mouse to hover over the bottom left corner of the screen and click the pop-up.

When you move to the lower left hot corner in the Start screen itself it will take you back to your most recently used app.

Figure 1 - 13 **- Desktop**

Display Most Recently Used Apps

If you are in the **Start** screen, **Desktop** or an app you can move your mouse to the upper left corner of the screen to get back to the most recently used app.

To view all the most recently used Apps hover over the top left of the screen and then move the mouse down along the left side of the screen to display the list.

When the Desktop app is running you can right-click the lower left hot corner (or use the **Windows Logo Key** + **X** key combination) to bring up an advanced context menu of useful features such as Control Panel, Programs and Features, Power Options, Task Manager, Search, Windows Explorer, Command Prompt, Device Manager and Network Connections etc.

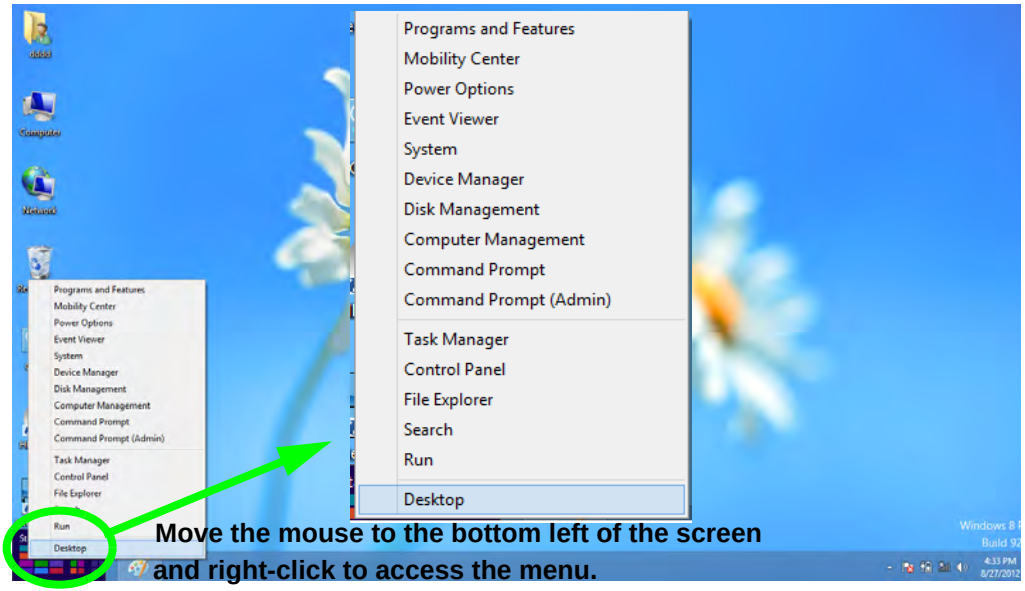


Figure 1 - 14 **- Advanced Context Menu (Right-Click lower left hot corner)**

Windows 8 Charms Bar

The right side of the screen displays the ***Windows 8 Charms Bar***. The Charms Bar contains the **Search**, **Share**, **Start**, **Devices** and **Settings** menus. To access up the Charms Bar move the cursor to the upper or lower right corners of the screen, and then hover over one of the items in the Charms Bar to activate it (the bar will be black when it is active), or use the **Windows Logo Key** **+ C** key combination.

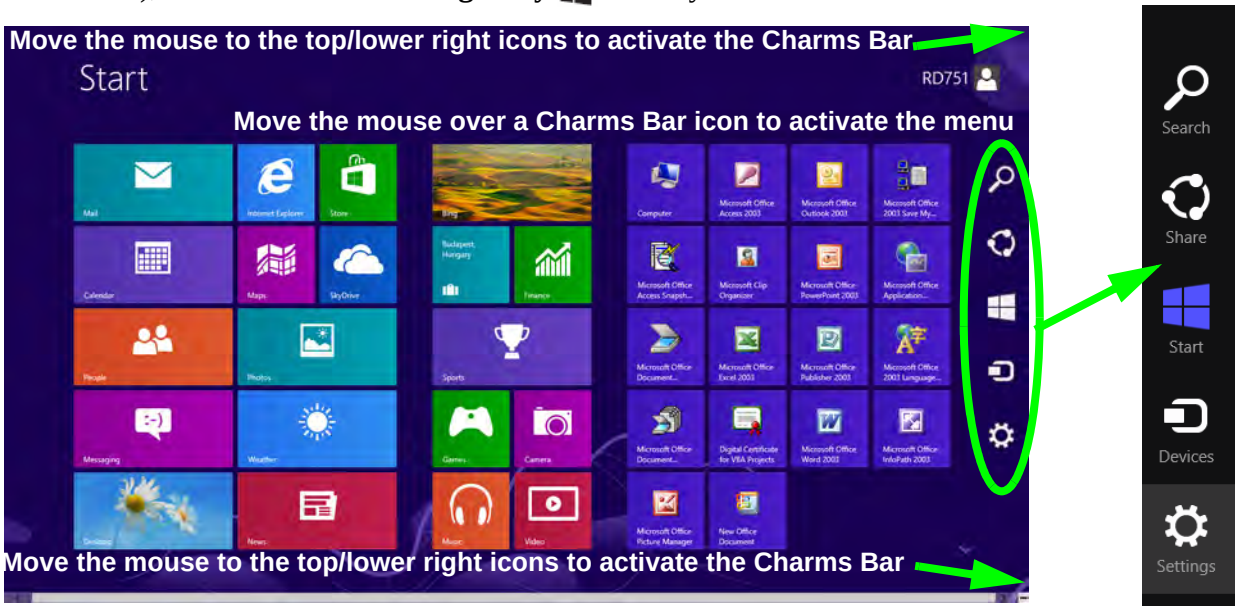
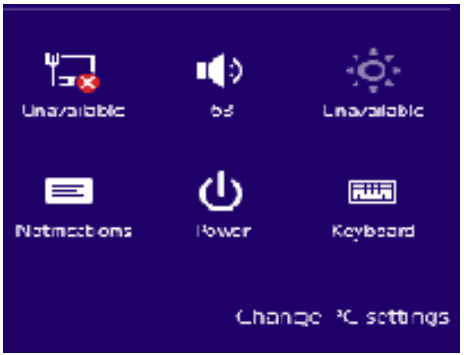

Move the mouse to the top/lower right icons to activate the Charms Bar
Start
RD751
Move the mouse over a Charms Bar icon to activate the menu
Move the mouse to the top/lower right icons to activate the Charms Bar
Search
Share
Start
Devices
Settings

Figure 1 - 15 **- Start Screen with Charms Bar**

Charms Bar Items

- **Search**: You can search for any file, application, Apps and control panel settings with instantaneous results.
- **Share**: This button is used to share information with people via mail or social networks.
- **Start**: Click to bring up the Start Menu (the same function as pressing the Windows Logo Key or clicking the bottom left of the screen).
- **Devices**: Click this button to change connected peripheral device settings e.g. an external display.
- **Settings**: This button gives instant access to the computer settings, such as Network, Audio, Notifications, Power and Keyboard (click **Change PC Settings** to activate the PC Settings menu).



Charms Bar - TouchPad Access

To quick access the **Charms Bar** using the TouchPad:

1. Place your finger **off** the TouchPad (slightly to the right of the pad resting on the computer).
2. Move your finger across to the left on to the TouchPad.
3. The Charms Bar will then pop-up.

Figure 1 - 16 **- Settings Menu**

Windows 8 Control Panel

In many instances throughout this manual you will see an instruction to open the **Control Panel**. The Control Panel can be accessed in a number of ways in ***Windows 8***.

- Click/ **Search** in the **Windows Charms Bar** (see previous page) and the search pane will pop out. Type *Control Panel* and select it from the results to the left.

Figure 1 - 17 **- Search (Control Panel)**

- Click on **Computer** (you may need to pin **Computer** to the Start screen) in the **Start** screen, click on **Computer** in the top menu and select **Open Control Panel** from the ribbon.

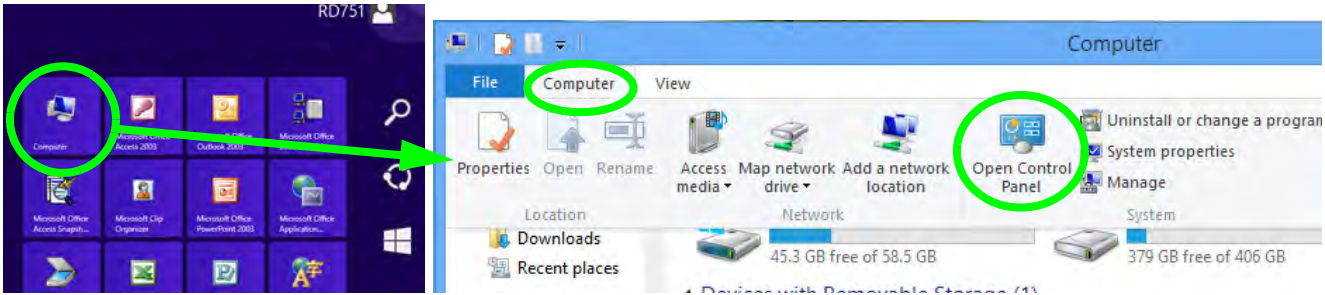


Figure 1 - 18 **- Open Control Panel (Computer)**

- When in the **Desktop** app (this does not apply to the Start screen) click on **Settings** in the **Windows Charms Bar** and select **Control Panel** from the menu.

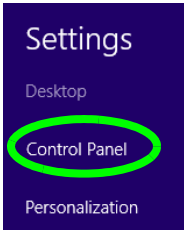


Figure 1 - 19 **- Settings Charms Bar (Desktop App Only)**

- **Right-click on a blank area of the Start screen,** or **swipe a finger from the top or bottom of the touch screen**. Click the **All Apps** icon and click Control Panel.

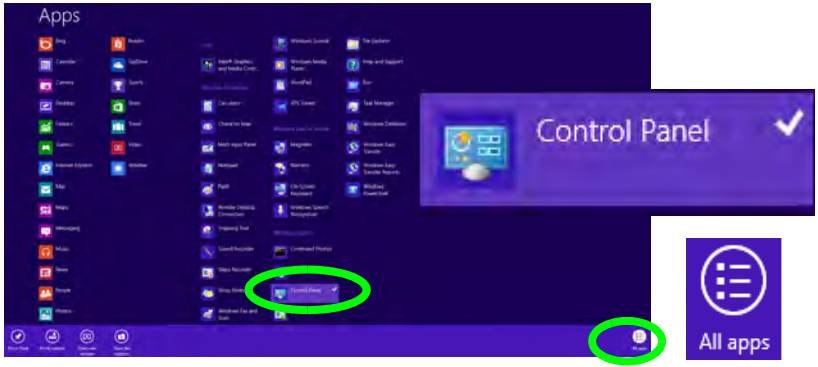


Figure 1 - 20 **- All Apps - Control Panel**

- Right-click the lower left hot corner to bring up the menu and select Control Panel (see *Figure 1 - 14 on page 1 - 24*).

Keyboard Shortcut to Control Panel

You can also use keyboard shortcuts to access the Control Panel. Press the **Windows logo key and X** to bring up the context menu, and then press **P** to bring up the Control Panel. Alternatively press the **Windows logo key and R** to bring up the **Run** dialog box, and then type "**Control Panel**" and press Enter to access the Control Panel.

Windows 8 Taskbar

In many instances throughout this manual you will see an instruction to access the **notification area of the taskbar**. In ***Windows 8*** the taskbar is accessed from the **Desktop** application. If you are in the Start screen you will need to click the Desktop app to switch to the Desktop.

The taskbar is displayed at the bottom of the desktop screen, and you can see the notification area of the taskbar in the bottom right of the screen. Some of the Control Panels and applications referred to during the course of this manual can be accessed from here.

Figure 1 - 21 **- Desktop Taskbar**

You can pin/unpin apps to/from the taskbar in much the same way as you can to the Start screen (see ***"Accessing Pining/Unpinning All Apps" on page 1 - 22***).

Video Features

NVIDIA® Optimus™ Technology

NVIDIA® Optimus™ technology is a seamless technology designed to get best performance from the graphics system while allowing longer battery life, without having to manually change settings. When the computer is in **Optimus Mode** it will **automatically** switch between the integrated UMA (Unified Memory Architecture) GPU (**iGPU**) and the discrete GPU (**dGPU**) when required by the applications in use. This switch is seamless to the user and does not require any use of the GPU button (see *"NVIDIA® Optimus™ Technology" on page C - 2*).

The **GPU button** allows you to switch between the **Optimus Mode** (where GPU switching is automatically handled) and **UMA Mode** (for constant power-saving with the integrated GPU only).

Icon	Color	Description	Note
	Green	UMA Mode Activated	The **GPU LED indicators** will display which GPU is currently in use
	Orange	Optimus Mode Activated	
	Green	Integrated GPU (**iGPU**) Activated	
	Orange	Discrete GPU (**dGPU**) Activated	

Table 1 - 7 **- GPU Modes & GPU LED Indicators**

Video Features

You can switch display devices, and configure display options, from the **Display** control panel (in **Appearances and Personalization**) in ***Windows 8*** when running the **Desktop** app (see ***"Desktop Application" on page 1 - 23***). In ***Windows 8*** it is possible to quickly configure external displays from the **Devices** menu item in the **Charms Bar** (see ***"Windows 8 Charms Bar" on page 1 - 25***).

To Configure Displays from Devices (Charms Bar):

1. Attach your display to the HDMI-Out port, and turn it on.
2. Go the **Charms Bar** and select **Devices**.
3. Click **Second Screen**.
4. Click on any one of the options from the menu to select Duplicate, Extend or a Single display

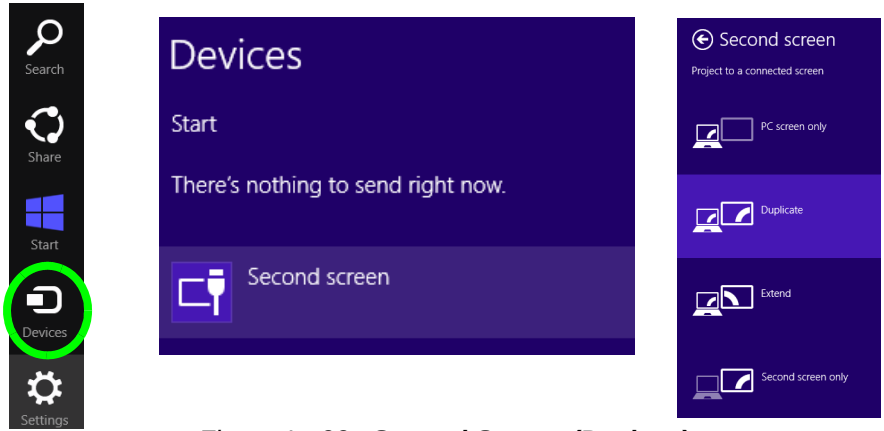
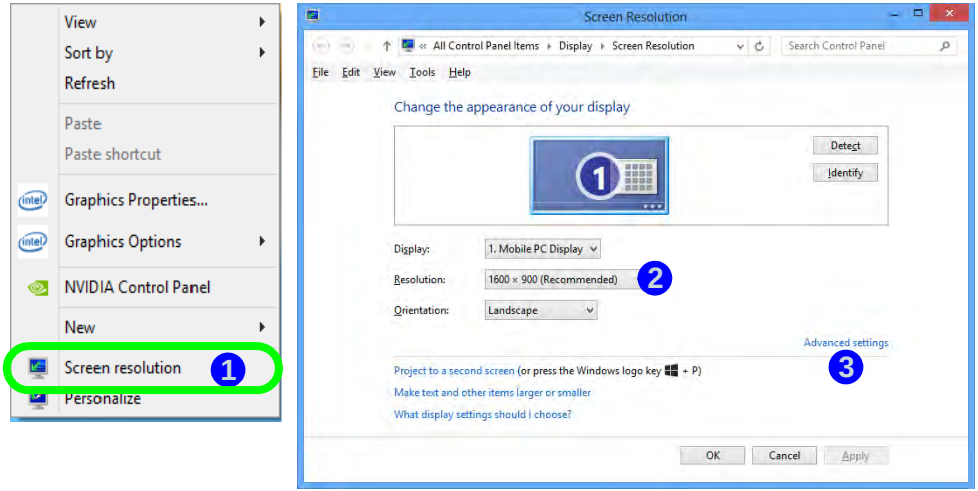


Figure 1 - 22 **- Second Screen (Devices)**

To access **Display (Control Panel) and Screen Resolution** in ***Windows 8***:

1. Go to the **Control Panel**.
2. Click **Display** (icon) - In the **Appearance and Personalization** category.
3. **Adjust resolution**.



Right-Click Desktop App

1. You can right-click the desktop and select **Screen resolution** 1 (***Figure 1 - 23***).
2. Use the dropbox to select the screen **Resolution** 2 (***Figure 1 - 23***).
3. Click **Advanced settings** 3 (***Figure 1 - 23***) to bring up the **Advanced** properties tabs.

Figure 1 - 23 **- Screen Resolution**

To access the ***Intel(R) Graphics Control Panel***:

1. Click **Advanced settings** 3 (*Figure 1 - 23 on page 1 - 33*) in the **Screen Resolution** control panel in ***Windows***.
2. Click the **Intel(R)...** tab and click **Graphics Properties** (button) 4 (*Figure 1 - 24 on page 1 - 34*) .

OR

3. Right-click the desktop and select **Graphics Properties** from the menu.

OR

4. Click the icon in the notification area of the Desktop taskbar and select **Graphics Properties** from the menu.

Figure 1 - 24 **- Intel HD Graphics Control Panel**

To access the ***NVIDIA Control Panel***:

1. Right-click the desktop and select **NVIDIA Control Panel** 5 (***Figure 1 - 25***).

OR

2. Double-click the icon 6 (***Figure 1 - 25***) in the ***Windows*** control panel.

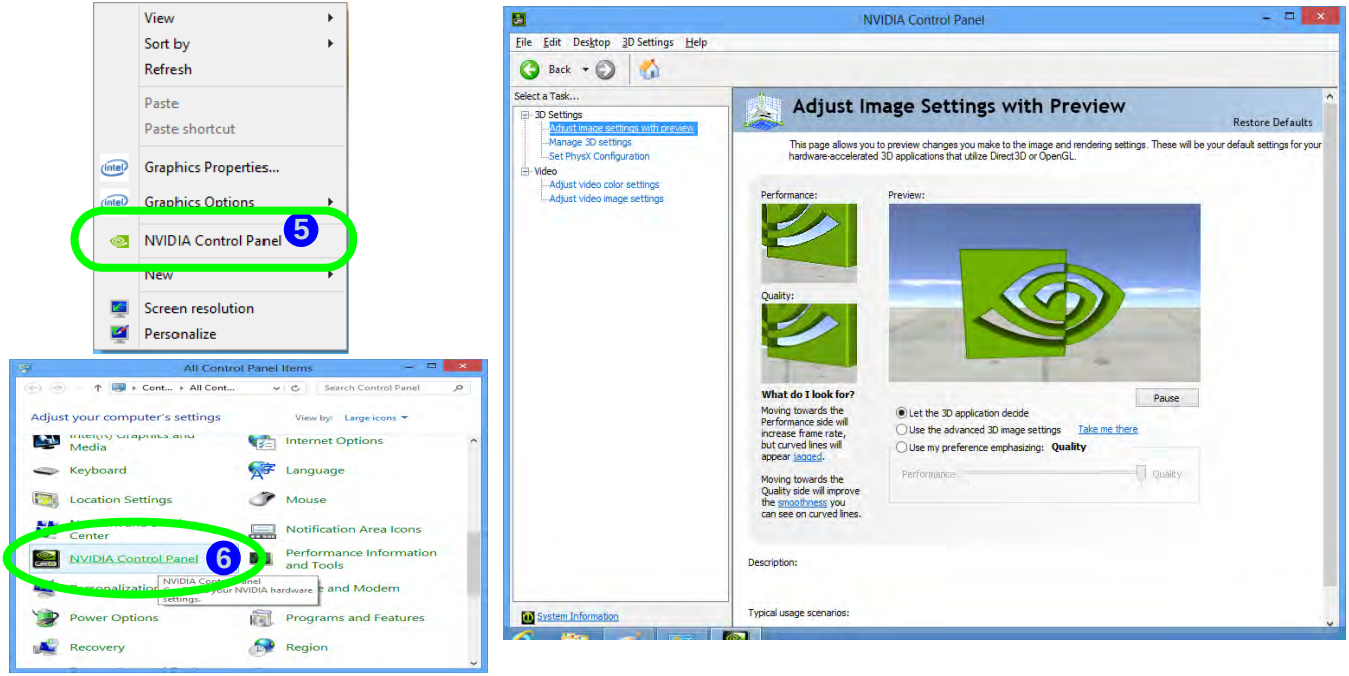


Figure 1 - 25 **- NVIDIA Control Panel**

Power Options

Power Options (Hardware and Sound) can be accessed from the Control Panel. The **Power Menu** item in **Settings** in the **Charms Bar** in ***Windows 8*** may be used to **Shut down** or **Restart** (you can also add **Hibernate/Sleep** to the menu - see ***"Adding Hibernate/Sleep to the Power Menu" on page 3 - 9***).

Shut Down, Restart or Sleep

1. Go to the **Charms Bar** and click **Settings**.
2. Click **Power** .
3. Select **Sleep**, **Shut Down** or **Restart**.

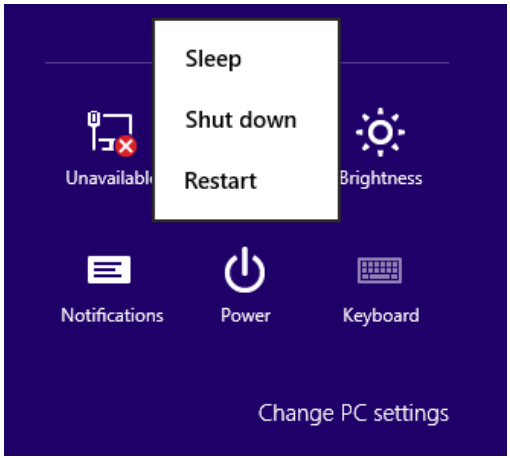


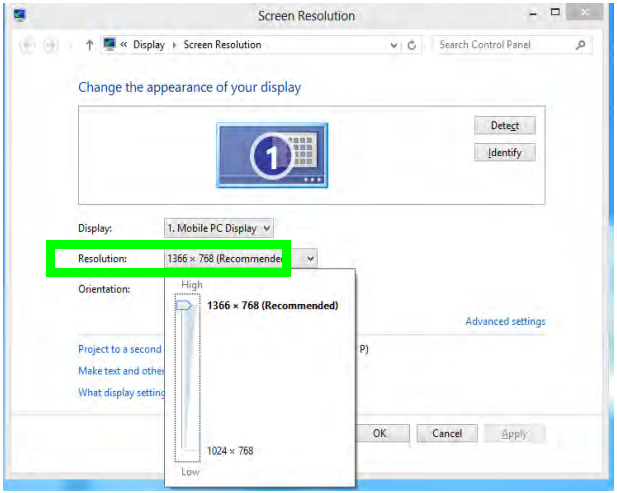
Figure 1 - 26 **- Power (Settings)**

Running Apps

To run apps in ***Windows 8*** you will need to check that the **Screen Resolution** and **User Account Control Settings** are compatible with the system requirements.

Screen Resolution Settings

1. Switch to the Windows Desktop (click the app or use the Windows logo key **+ D** key combination).
2. Right-click a blank area of the Windows Desktop and select **Screen Resolution**. Adjust the **Resolution** to make sure that it is at least **1024 * 768,** although preferably **1366 * 768** or above (see sidebar).



Screen Resolution for Metro Style Apps (Windows 8)

The minimum resolution in which Metro style Apps will run is **1024x768**.

The minimum resolution required to support all the features of Windows 8 (including multitasking with snap) is **1366x768**.

These specs are the minimum screen resolution that supports all the features of Windows 8 on a useful physical size.

Figure 1 - 27 **- Screen Resolution**

User Account Control Settings

If your computer meets the minimum screen resolution requirements, and still you can't run Metro apps, then that you have to check the status of **User Account Control** (UAC). Metro apps may fail to open when the UAC is turned off. To check whether the UAC is on or off, follow the instructions below.

1. Open the **Control Panel**.
2. Click on **User Accounts** and then click on **Change User Account Control settings** (or click **System and Security** and click **Change User Account Control Settings** under **Action Center**).
3. If the slider is in the **Never notify** position, then the UAC is disabled.
4. To enable or turn on the UAC, move the slider to **Always notify** or **Notify me when apps try to make changes to my computer (default)** position, and then click **OK**.

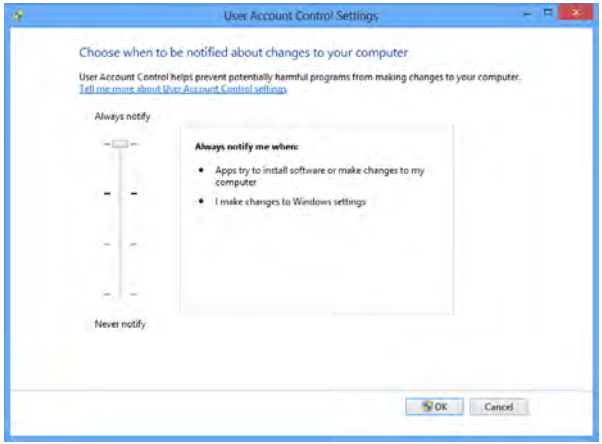

User Account Control Settings
Choose when to be notified about changes to your computer
User Account Control helps prevent potentially harmful programs from making changes to your computer.
Tell me more about User Account Control settings
Always notify
Always notify me when:
Apps try to install software or make changes to my computer
I make changes to Windows settings
Never notify
OK
Cancel

Figure 1 - 28 **- User Account Control**

Chapter 2: Storage Devices, Audio & Mouse

Overview

Read this chapter to learn more about the following main features and components of the computer:

- Hard Disk Drive
- Optical Device
- Multi-in-1 Card Reader
- Audio Features
- TouchPad and Buttons/Mouse

Power Safety

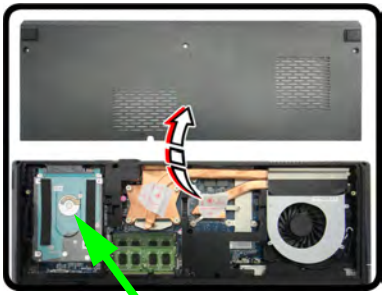
Before attempting to access any of the internal components of your computer please ensure that the machine is not connected to the AC power, and that the machine is turned off. Also ensure that all peripheral cables, including phone lines, are disconnected from the computer.

Hard Disk Drive

The hard disk drive(s) is(are) used to store your data in the computer. The hard disk(s) can be taken out to accommodate other 2.5" serial (SATA) hard disk drives with a height of 9.5 mm. The hard disk(s) is(are) accessible after removing the hard disk bay cover (**primary hard disk drive**) or component bay cover (**secondary hard disk drive**) from the bottom of your computer as seen below.

Further details on removing and inserting the hard disk are available in ***"Upgrading the Hard Disk Drive(s)" on page 6 - 8***.

Primary HDD



Secondary HDD

Figure 2 - 1
Hard Disk Location

Optical Device

There is a bay for a 5.25" optical (CD/DVD) device (12.7mm height). The actual device will depend on the model you purchased (see *"Storage" on page D - 2*). The optical device is usually labeled "**Drive D:**" and may be used as a boot device if properly set in the **BIOS** (see *"Boot Menu" on page 5 - 14*).

Loading Discs

To insert a CD/DVD, press the open button 1 and carefully place a CD/DVD onto the disc tray with label-side facing up (use just enough force for the disc to click onto the tray's spindle). Gently push the CD/DVD tray in until its lock "clicks" and you are ready to start. The busy indicator 2 will light up while data is being accessed, or while an audio/video CD, or DVD, is playing. If power is unexpectedly interrupted, insert an object such as a straightened paper clip into the emergency eject hole 3 to open the tray.

Sound Volume Adjustment

How high the sound volume can be set depends on the setting of the volume control within ***Windows***. Click the **Volume** icon on the taskbar to check the setting (see *"Audio Features" on page 2 - 7*).

Figure 2 - 2
Optical Device

CD Emergency Eject

If you need to manually eject a CD (e.g. due to an unexpected power interruption) you may push the end of a straightened paper clip into the emergency eject hole. However please do NOT use a sharpened pencil or similar object that may break and become lodged in the hole.

Disk Eject Warning

Don't try to remove a CD/DVD while the system is accessing it. This may cause the system to "crash".

Handling CDs or DVDs

Proper handling of your CDs/DVDs will prevent them from being damaged. Please follow the advice below to make sure that the data stored on your CDs/DVDs can be accessed.

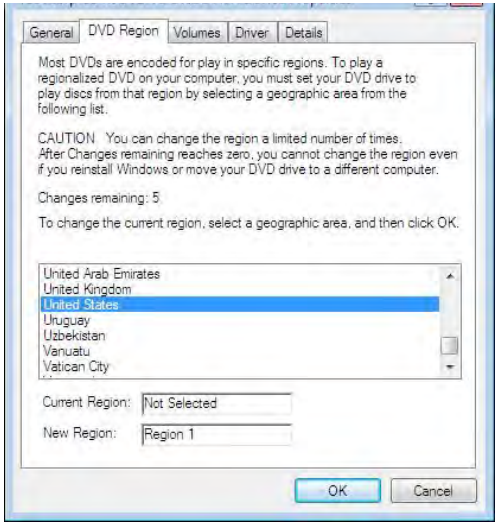
Note the following:

- Hold the CD or DVD by the edges; do not touch the surface of the disc.
- Use a clean, soft, dry cloth to remove dust or fingerprints.
- Do not write on the surface with a pen.
- Do not attach paper or other materials to the surface of the disc.
- Do not store or place the CD or DVD in high-temperature areas.
- Do not use benzene, thinner, or other cleaners to clean the CD or DVD.
- Do not bend the CD or DVD.
- Do not drop or subject the CD or DVD to shock.

DVD Regional Codes

To change the DVD regional codes:

1. Go to the **Control Panel**
2. Double-click **Device Manager (Hardware and Sound)**, then click the **+** next to **DVD/CD-ROM drives**.
3. Double-click on the DVD-ROM device to bring up the **Properties** dialog box, and select the **DVD Region** (tab) to bring up the control panel to allow you to adjust the regional code.


General
DVD Region
Volumes
Driver
Details
Most DVDs are encoded for play in specific regions. To play a regionalized DVD on your computer, you must set your DVD drive to play discs from that region by selecting a geographic area from the following list.
CAUTION: You can change the region a limited number of times. After Changes remaining reaches zero, you cannot change the region even if you reinstall Windows or move your DVD drive to a different computer.
Changes remaining: 5
To change the current region, select a geographic area, and then click OK.
United Arab Emirates
United Kingdom
United States
Uruguay
Uzbekistan
Vanuatu
Vatican City
Current Region:
Not Selected
New Region:
Region 1
OK
Cancel

- **Region 1** - USA & Canada
- **Region 2** - Western Europe, Japan, South Africa, Middle East & Egypt
- **Region 3** - South-East Asia, Taiwan, South Korea, The Philippines, Indonesia, Hong Kong
- **Region 4** - South & Central America, Mexico, Australia, New Zealand
- **Region 5** - N Korea, Russia, Eastern Europe, India & Most of Africa
- **Region 6** - China

DVD Region Note

DVD region detection is device dependent, not OS-dependent. You can select your module's region code 5 times. The fifth selection is permanent. This cannot be altered even if you change your operating system or you use the module in another computer.

Figure 2 - 3
DVD Region Codes

Card Reader Cover

Make sure you keep the cover in the card reader when not in use. This will help prevent foreign objects and/or dust getting in to the card reader.

Push-Push Card Reader

The card reader features a push-in/push-out card insertion and ejection mechanism. Simply push the card to insert and eject it, however Ms Duo cards require an adapter.

Multi-in-1 Card Reader

The card reader allows you to use some of the latest digital storage cards. Push the card into the slot and it will appear as a removable device, and can be accessed in the same way as your hard disk (s). Make sure you install the Card Reader driver (see *"Card Reader" on page 4 - 6*).

- MMC (MultiMedia Card) / RSMMC
- SD (Secure Digital) / Mini SD / SDHC / SDXC
- MS (Memory Stick) / MS Pro / MS Duo

Note: Some of these cards require PC adapters that are usually supplied with the cards.

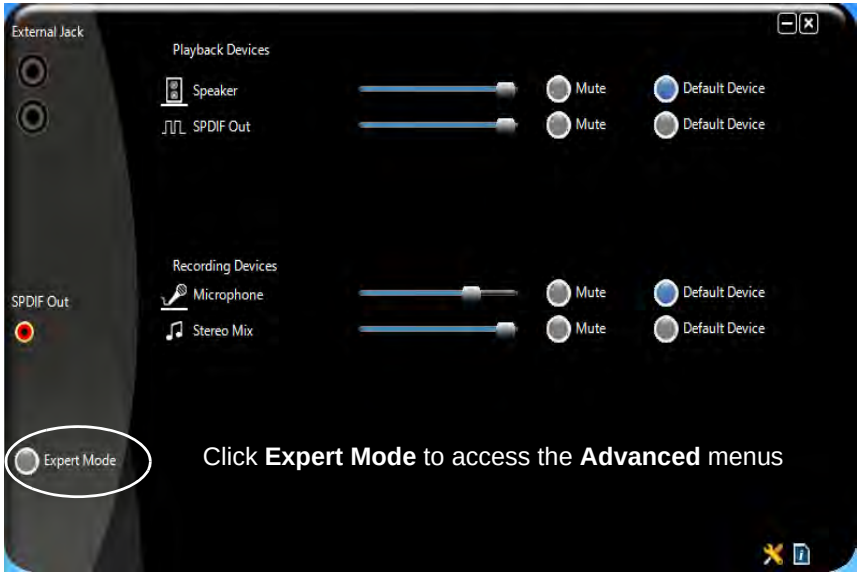
Figure 2 - 4
Left View

1. Card Reader

Audio Features

You can configure the audio options on your computer from the **Sound** control panel in ***Windows***, from the **HD VDeck** icon on the desktop or **VIA HD Audio Deck** control panel VIA HD Audio Deck .

The volume may also be adjusted by means of the **Fn** + **F5/F6** key combination.



Sound Volume Adjustment

The sound volume level is set using the volume control within ***Windows*** (and the volume function keys on the computer). Click the volume icon in the taskbar to check the setting.

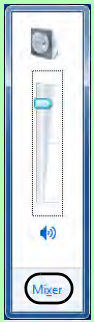
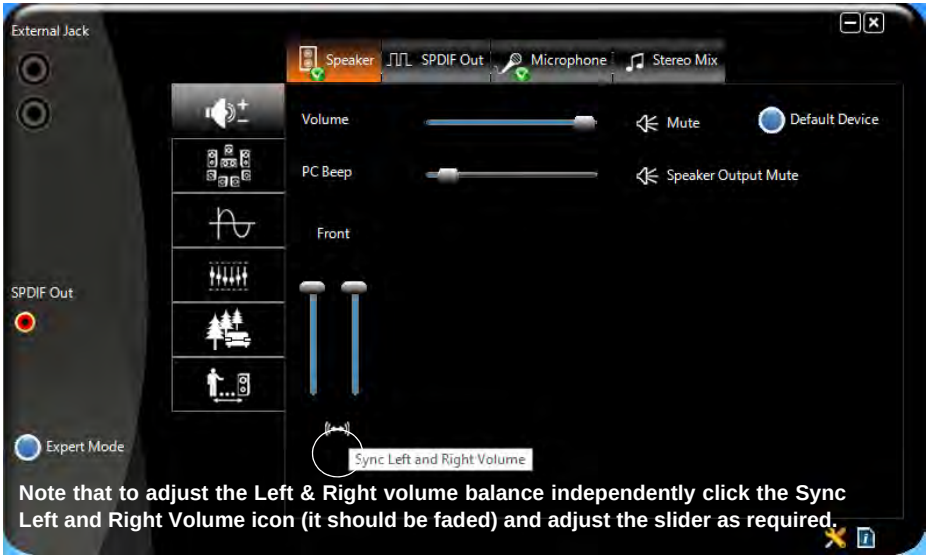


Figure 2 - 5
VIA HD Audio Deck

Expert Mode will allow you to access more advanced configuration menus for **Speaker**, **Microphone** and **Stereo Mix**.



Syncing Left & Right Volume Balance

If you wish to adjust the left and right channel volume levels separately, you will need to adjust this from the **VIA HD Audio Deck in Expert Mode.**

Click **Speaker** in **VIA HD Audio Deck** (in Expert Mode) and click the **Sync Left and Right volume** button (see left). You can then adjust the volume sliders independently (this setting also controls the **Balance** setting in the Windows **Sound** control panel).

Figure 2 - 6
VIA HD Audio Deck (Expert Mode)

Sound Blaster Cinema Audio

Note that **you will need to install the Sound Blaster Cinema audio application in order to get maximum audio performance. See** ***"Sound Blaster Cinema EQ" on page 7 - 24***.

TouchPad and Buttons/Mouse

The TouchPad is an alternative to the mouse; however, you can also add a mouse to your computer through one of the USB ports. The TouchPad buttons function in much the same way as a two-button mouse.

Mouse Driver

If you are using an external mouse your operating system may be able to auto-configure your mouse during its installation or only enable its basic functions. Be sure to check the device's user documentation for details.

TouchPad Scrolling

This computer model series may feature different TouchPad versions.

These TouchPads may differ in their vertical scrolling function in most scrollable windows.

Some TouchPads require sliding the finger up and down on the right of the TouchPad to scroll the window. Other versions require tapping/holding down the finger at the top right or bottom right of the TouchPad to scroll the window.

Once you have installed the TouchPad driver (see ***"TouchPad" on page 4 - 6***) you can configure the functions from the Mouse control panel in ***Windows***, or by double-clicking the TouchPad driver icon in the notification area of the taskbar in the Desktop app. You may then configure the TouchPad tapping, buttons, scrolling, pointer motion and sensitivity options to your preferences. You will find further information at www.synaptics.com.

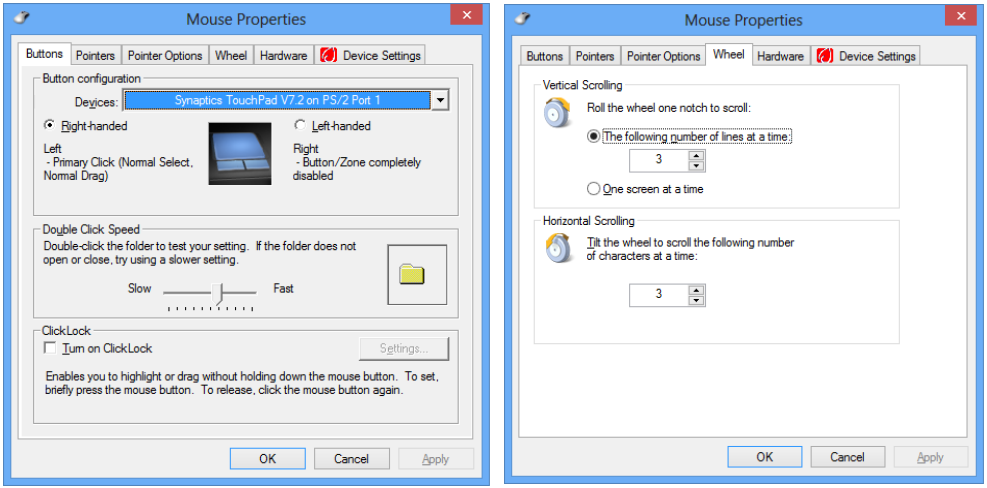


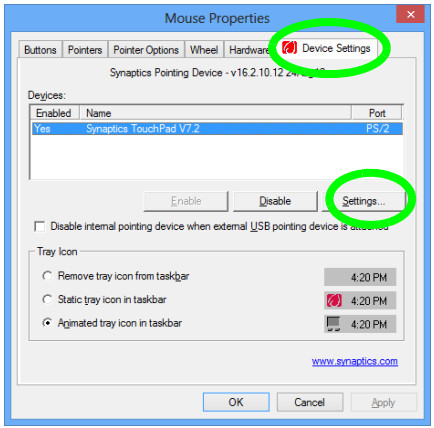
Figure 2 - 7
Mouse Properties

Gestures and Device Settings

The Synaptics Gestures Suite application allows you to use a specific gesture (action) on the surface of the Touchpad to perform specific actions to manipulate documents, objects and applications.

You can configure the settings from the Device Settings tab in **Mouse Properties**:

1. Go to the **Control Panel**.
2. Click **Mouse** (**Hardware and Sound**).
3. Click **Device Settings** (tab) and click **Settings**.
4. Use the menu tree on the left to access the user configurable settings.



Show Video

You can get a clearer view of the gestures involved by clicking the **Show Video** option for each gesture item.

Select the gesture (**Pinch Zoom, Rotating, Three Fingers Down and Three Finger Flick**) in the **Device Settings > Settings** left tree menu and click the **Show Video** button to see the demonstration video.

For more details on any of the gestures see the **help** in the lower part of the right menu window.

Figure 2 - 8
Mouse Properties - Device Settings

Disabling the Touchpad

If you need to disable the Touchpad for any reason (e.g. you may find that when using the computer's internal keyboard you accidentally trigger the Touchpad when resting your wrists or palms on it) you can do so by using **Fn + F1** key combination.

You can also set the system to automatically disable the internal Touchpad when an external USB point device (e.g a USB mouse) is attached.

1. Go to the **Mouse Properties** control panel.
2. Click to select **Device Settings** (tab).
3. Click to place a tick in the "***Disable internal pointing device when external USB pointing device is attached***" tickbox.
4. Click **OK** to save the setting.

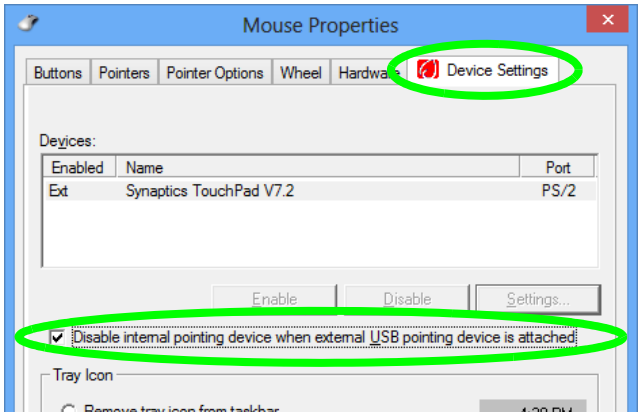


Figure 2 - 9
Mouse Properties (Disable Touchpad)

Scrolling

The Two-Finger scrolling feature works in most scrollable windows and allows you to scroll horizontally and vertically. Place two fingers, slightly separated, on the TouchPad surface and slide both fingers in the direction required (in a straight continuous motion).

Figure 2 - 10
Scrolling Gesture

Zooming

The Pinch Zoom gesture can be used to perform the same function as a scroll wheel in ***Windows*** applications that support CTRL + scroll wheel zoom functionality. Place two fingers on the TouchPad (for best results use the tips of the fingers) and slide them apart to zoom in, or closer together to zoom out.

Figure 2 - 11
Zooming Gesture

Rotating

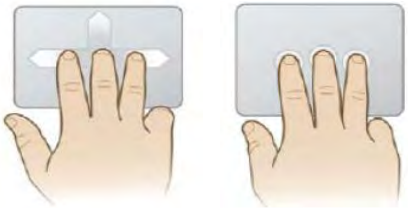
Use the Pivot Rotate gesture to rotate objects (e.g. photos) in 90 degree increments. Place a finger down on the left “target” zone and keep it stationary. Place another finger near the middle of the TouchPad and slide it in a circular motion around the stationary finger (clockwise or counterclockwise) to rotate the object.

Figure 2 - 12
Rotating Gesture

Three Finger-Flick/Three Fingers Down (Press)

The Three Finger-Flick gesture may be used to enhance navigation with a variety of applications such as browsing the Internet or scrolling through a photo viewer. The Three Fingers Down gesture may be used to launch user-selectable applications.

Figure 2 - 13
Flick/Press Gesture



Chapter 3: Power Management

Overview

To conserve power, especially when using the battery, your computer power management conserves power by controlling individual components of the computer (the monitor and hard disk drive) or the whole system. This chapter covers:

- The Power Sources
- Turning On the Computer
- Power Plans
- Power-Saving States
- Configuring the Power Buttons
- Battery Information

The computer uses enhanced power saving techniques to give the operating system (OS) direct control over the power and thermal states of devices and processors. For example, this enables the OS to set devices into low-power states based on user settings and information from applications.

OS Note

Power management functions will vary slightly depending on your operating system. For more information it is best to refer to the user's manual of your operating system.

Forced Off

If the system "hangs", and the **Ctrl + Alt + Del** key combination doesn't work, press the power button for **4 seconds**, or longer, to force the system to turn itself off.

The Power Sources

The computer can be powered by either an AC/DC adapter or a battery pack.

AC/DC Adapter

Use only the AC/DC adapter that comes with your computer. The wrong type of AC/DC adapter will damage the computer and its components.

1. Attach the AC/DC adapter to the DC-in jack on the left of the computer.
2. Plug the AC power cord into an outlet, and then connect the AC power cord to the AC/DC adapter.
3. Raise the lid/LCD to a comfortable viewing angle.
4. Press the power button to turn "On".

Battery

The battery allows you to use your computer while you are on the road or when an electrical outlet is unavailable. Battery life varies depending on the applications and the configuration you're using. **To increase battery life, let the battery discharge completely before recharging** (see ***"Battery FAQ" on page 3 - 17***).

We recommend that you do not remove the battery. For more information on the battery, please refer to ***"Battery Information" on page 3 - 13***.

Turning On the Computer

Now you are ready to begin using your computer. To turn it on simply press the power button on the front panel.

When the computer is on, you can use the power button as a Stand by/Hibernate/Shutdown hot-key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will shut the computer down). Use **Power Options** (**Hardware and Sound**) in the ***Windows*** control panel to configure this feature.

Shut Down

Note that you should always shut your computer down by choosing the **Shut Down** command from the **Power Menu** in the **Settings** menu in the ***Windows 8 Charms Bar***.

This will help prevent hard disk or system problems. If you want to add **Hibernate/Sleep** to the **Power Menu** see ***"Adding Hibernate/Sleep to the Power Menu" on page 3 - 9***.

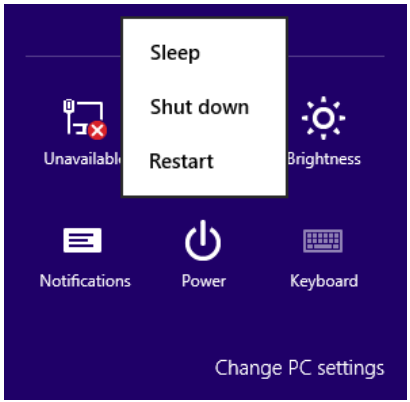


Figure 3 - 1
Power Menu (Settings - Charms Bar)

Power Button as Stand by or Hibernate Button

You can use the OS's "Power Options" control panel to set the power button to send the system into Stand by or Hibernate mode (see your OS's documentation, or ***"Configuring the Power Buttons" on page 3 - 8*** for details).

Resuming Operation

See *Table 3 - 1, on page 3 - 10* for information on how to resume from a power-saving state.

Password

It is recommended that you enable a password on system resume in order to protect your data.

Power Plans

The computer can be configured to conserve power by means of **power plans**. You can use (or modify) an existing **power plan**, or create a new one.

The settings may be adjusted to set the **display** to turn off after a specified time, and to send the computer into **Sleep** after a period of inactivity.

Click ***Change plan settings*** and then click ***Change advanced power settings*** to access further configuration options in **Advanced Settings**.

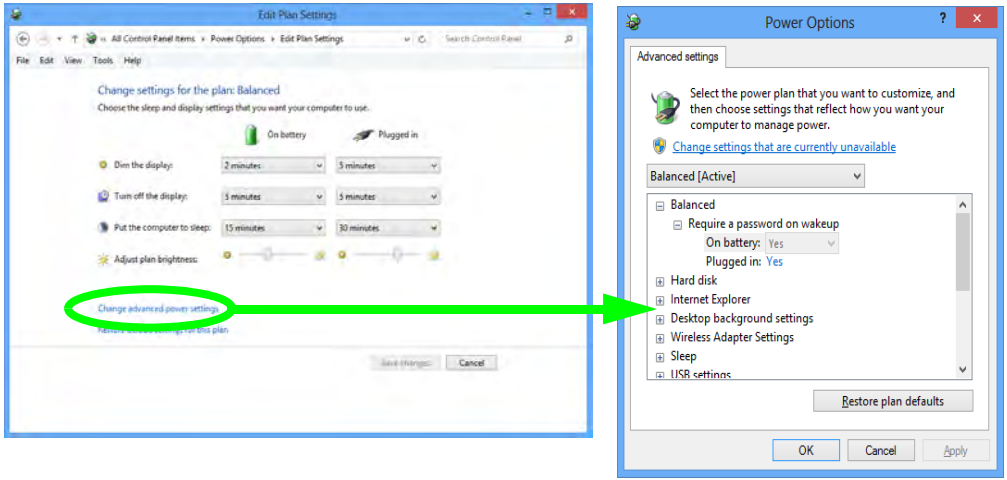


Figure 3 - 2
Power Plan Advanced Settings

Each ***Windows* power plan** will also adjust the processor performance of your machine in order to save power. This is worth bearing in mind if you are experiencing any reduced performance (especially under DC/battery power).

Choose **High performance** (you may need to click **Show additional plans** to view the High performance plan) for maximum performance when the computer is powered from an AC power source. Choose the **Power saver** (bear in mind that this scheme may slow down the overall performance of the computer in order to save power) for maximum power saving when the computer is battery (DC power) powered.

Click to Show/Hide additional power plans

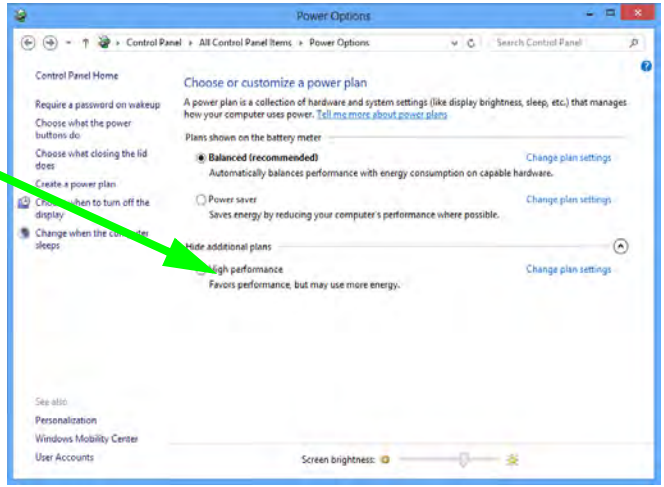

Power Options
Control Panel
All Control Panel Items
Power Options
Search Control Panel
Control Panel Home
Require a password on wakeup
Choose what the power buttons do
Choose what closing the lid does
Create a power plan
Choose when to turn off the display
Change when the computer sleeps
Choose or customize a power plan
A power plan is a collection of hardware and system settings (like display brightness, sleep, etc.) that manages how your computer uses power. Tell me more about power plans
Plans shown on the battery meter
Balanced (recommended)
Automatically balances performance with energy consumption on capable hardware.
Change plan settings
Power saver
Saves energy by reducing your computer's performance where possible.
Change plan settings
Hide additional plans
High performance
Favors performance, but may use more energy.
Change plan settings
See also
Personalization
Windows Mobility Center
User Accounts
Screen brightness:

Figure 3 - 3
Power Plans

Wake On LAN Support (Windows 8)

Wake-On-LAN is only supported from **Sleep** or **Hibernate** states ***in Windows 8***.

If you require your computer to wake up from network activity in Windows 8 then make sure that the computer is either in **Sleep** or **Hibernate**.

Wake-On-LAN is not supported from Shutdown states in ***Windows 8***.

Power-Saving States

You can use power-saving states to stop the computer's operation and restart where you left off. ***Win 7*** uses the **Sleep, Hibernate** and **Shut Down** power-saving states.

Sleep

In **Sleep** all of your work, settings and preferences are saved to memory before the system sleeps. When you are not using your computer for a certain length of time, which you specify in the operating system, it will enter **Sleep** to save power.

The PC wakes from **Sleep within seconds** and will return you to where you last left off (what was on your desktop) without reopening the application(s) and file(s) you last used.

If your mobile PC in **Sleep** is running on battery power the system will use only a minimum amount of power. After an extended period the system will save all the information to the hard disk and shut the computer down before the battery becomes depleted.

To add **Sleep** to the **Power Menu** see ***"Adding Hibernate/Sleep to the Power Menu" on page 3 - 9***.

Hibernate

Hibernate uses the least amount of power of all the power-saving states and saves all of your information on a part of the hard disk before it turns the system off. If a power failure occurs the system can restore your work from the hard disk; if a power failure occurs when work is saved only to memory, then the work will be lost. **Hibernate** will also return you to where you last left off within seconds. You should put your mobile PC into **Hibernate** if you will not use the computer for a period of time, and will not have the chance to charge the battery. To add **Hibernate** to the **Power Menu** see *"Adding Hibernate/Sleep to the Power Menu" on page 3 - 9*.

Shut down

You should **Shut down** the computer if you plan to install new hardware (don't forget to remove the battery and follow all the safety instructions in **Chapter 6**), plan to be away from the computer for several days, or you do not need it to wake up and run a scheduled task. Returning to full operation from **Shut down** takes longer than from **Sleep** or **Hibernate**.

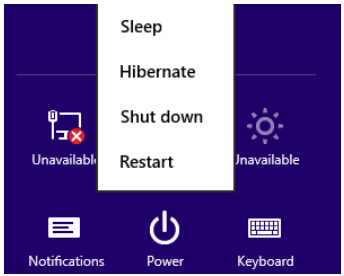


Figure 3 - 4
Power Menu

Password Protection

It is recommended that you enable a password on wake up in order to protect your data.

However you can disable this setting from the **Power Options** menu by clicking ***Require a password on wakeup*** in the left menu, and selecting the options (click ***Change settings that are currently unavailable***).

Configuring the Power Buttons

The power/sleep button (**Fn + F4** key combo) and closed lid may be set to send the computer in to a power-saving state. Click **Choose what the power buttons do** on the left menu in **Power Options** to bring up the menu.

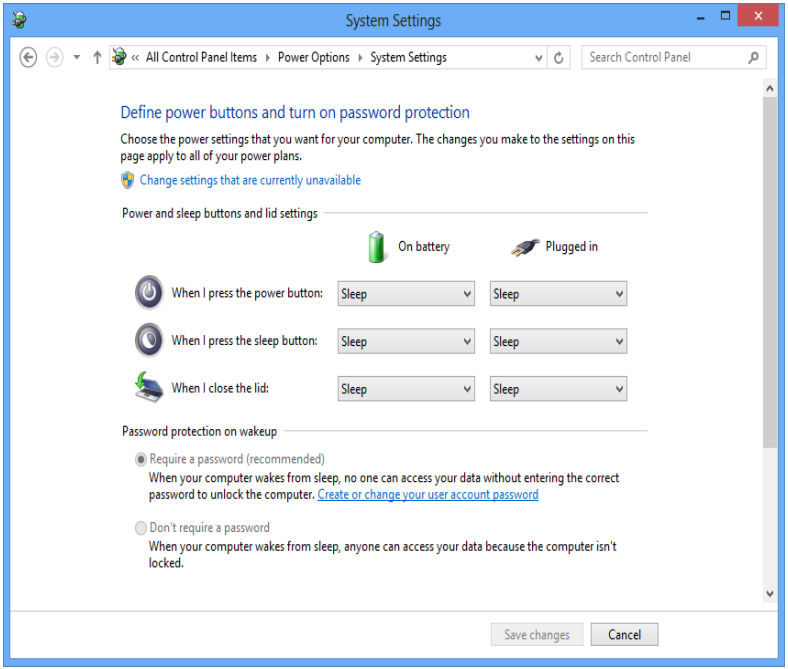

System Settings
All Control Panel Items
Power Options
System Settings
Search Control Panel
Define power buttons and turn on password protection
Choose the power settings that you want for your computer. The changes you make to the settings on this page apply to all of your power plans.
Change settings that are currently unavailable
Power and sleep buttons and lid settings
On battery
Plugged in
When I press the power button:
Sleep
Sleep
When I press the sleep button:
Sleep
Sleep
When I close the lid:
Sleep
Sleep
Password protection on wakeup
Require a password (recommended)
When your computer wakes from sleep, no one can access your data without entering the correct password to unlock the computer. Create or change your user account password
Don't require a password
When your computer wakes from sleep, anyone can access your data because the computer isn't locked.
Save changes
Cancel

Figure 3 - 5
Power Options Define Power Buttons

Adding Hibernate/Sleep to the Power Menu

Add **Hibernate/Sleep** to the **Power Menu** as follows.

1. Go to the **Power Options** (**Hardware and Sound**) control panel (see page ***1 - 23***).
2. Click "***Change settings that are currently unavailable***" Change settings that are currently unavailable .
3. Click **Choose what the power buttons do**.
4. Click to put a tick in the **Hibernate/Sleep** box under **Shutdown settings**.
5. Click **Save Changes** and close the control panel.

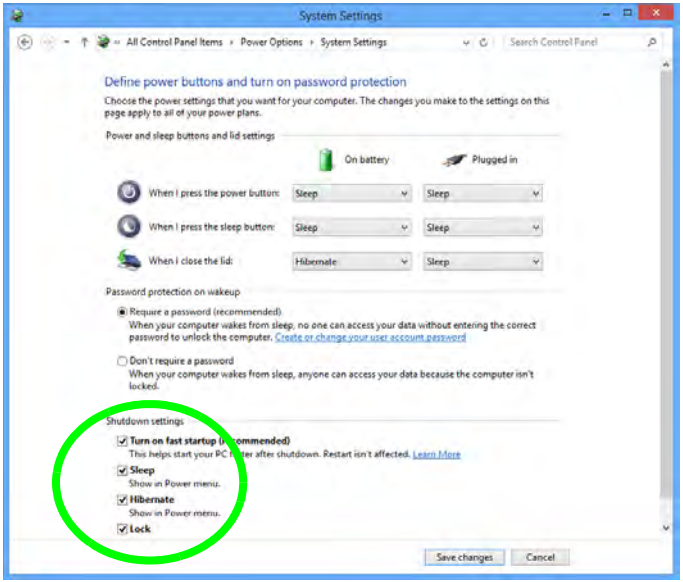

System Settings
All Control Panel Items › Power Options › System Settings
Search Control Panel
Define power buttons and turn on password protection
Choose the power settings that you want for your computer. The changes you make to the settings on this page apply to all of your power plans.
Power and sleep buttons and lid settings
On battery
Plugged in
When I press the power button:
Sleep
When I press the sleep button:
When I close the lid:
Hibernate
Password protection on wakeup
Require a password (recommended)
When your computer wakes from sleep, no one can access your data without entering the correct password to unlock the computer. Create or change your user account password
Don't require a password
When your computer wakes from sleep, anyone can access your data because the computer isn't locked.
Shutdown settings
Turn on fast startup (recommended)
This helps start your PC faster after shutdown. Restart isn't affected. Learn More
Sleep
Show in Power menu.
Hibernate
Show in Power menu.
Lock
Save changes
Cancel

Figure 3 - 6
Power Options Define Power Buttons - Shutdown Settings

Resuming Operation

You can resume operation from power-saving states by pressing the power button, or in some cases pressing the sleep button (**Fn + F4** key combo).

Table 3 - 1 **Resuming Operation**

Power Status	Icon Color	To Resume
Power Off	Off	Press the Power Button
Sleep	Blinking Green	Press the Power Button Press the Sleep Button (Fn + F4 Key Combo)
Hibernate	Off (battery) Orange (AC/DC adapter)	Press the Power Button
Display Turned Off	Green	Press a Key or Move the Mouse/Touchpad

Power Button

When the computer is on, you can use the power button as a Sleep/Hibernate/Shut Down hot key button when it is pressed for less than **4 seconds** (pressing and holding the power button for longer than this will force the computer to shut down).

Closing the Lid

If you have chosen to send the computer to **Sleep** when the lid is closed, raising the lid will wake the system up.

Power Conservation Modes

This system supports **Energy Star** power management features that place computers (CPU, hard drive, etc.) into a low-power sleep modes after a designated period of inactivity. Adjust **Power Conservation Modes** from the **Control Center**:

1. Press the **Fn + Esc** key combination to toggle the **Control Center** on/off.
2. Click either the **Performance**, **Balanced** or **Energy Star** button.
3. Click in a blank area of the icon or press a key on the keyboard to exit **Power Conservation Mode** without making any changes.

Power Conservation Modes

The **Energy Star** setting will result in maximum power saving, but with the possible loss of some performance.

Setting the mode to **Balance** will give power saving matched with performance.

Performance will give optimum computer performance but with less power conservation.

Figure 3 - 7
Control Center

Ctrl + Alt + Delete Key Combination

You can use the **CTRL + ALT + DEL** key combination from almost any of the ***Windows 8*** interfaces/Apps to bring up a full-screen displaying **Lock**, **Switch User**, **Log off**, **Change a password** and **Task Manager** options. If you click the **Power** icon in the lower right corner of the screen a power management option menu appears to display **Sleep**, **Shut down**, and **Restart**.

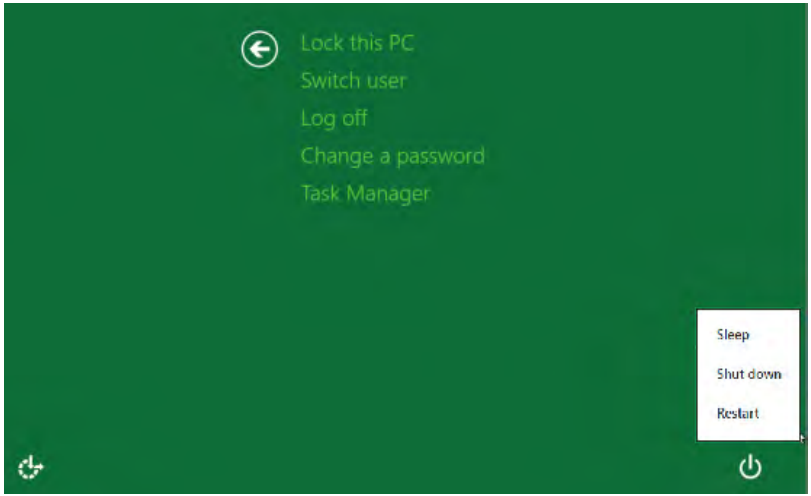


Figure 3 - 8
Ctrl + Alt + Delete Menu

To fully control all the power options (including Hibernate mode) go to the **Power Options** control panel and configure the power button, sleep button and lid to perform the function selected.

Battery Information

Follow these simple guidelines to get the best use out of your battery.

Battery Power

Your computer's battery power is dependent upon many factors, including the programs you are running, and peripheral devices attached. You can set actions to be taken (e.g. Shut down, Hibernate etc.), and set critical and low battery levels from power plan **Change plan settings > Change advanced power settings** (see ***Figure 3 - 3 on page 3 - 5***).

Click the battery icon in the notification area to see the current battery level and charge status.

Low Battery Warning

When the battery is critically low, immediately connect the AC/DC adapter to the computer or save your work, otherwise, the unsaved data will be lost when the power is depleted.

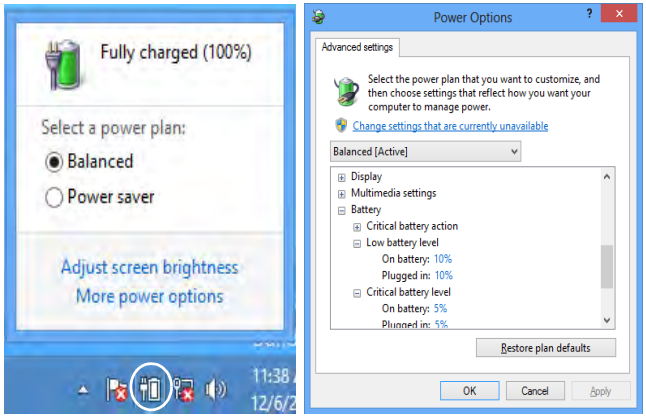


Figure 3 - 9
Battery Icon (Notification Area) & Battery Advanced Settings

Windows Mobility Center

The **Windows Mobility Center** control panel provides an easy point of access for information on battery status, power plans used and wireless device status etc.

Conserving Battery Power

- Use a **power plan** that conserves power (e.g **Power saver**), however note that this may have an affect on computer performance.
- Lower the brightness level of the LCD display. The system will decrease LCD brightness slightly to save power when it is not powered by the AC/DC adapter.
- Reduce the amount of time before the display is turned off.
- Close wireless, Bluetooth, modem or communication applications when they are not being used.
- Disconnect/remove any unnecessary external devices e.g. USB devices, ExpressCards etc.

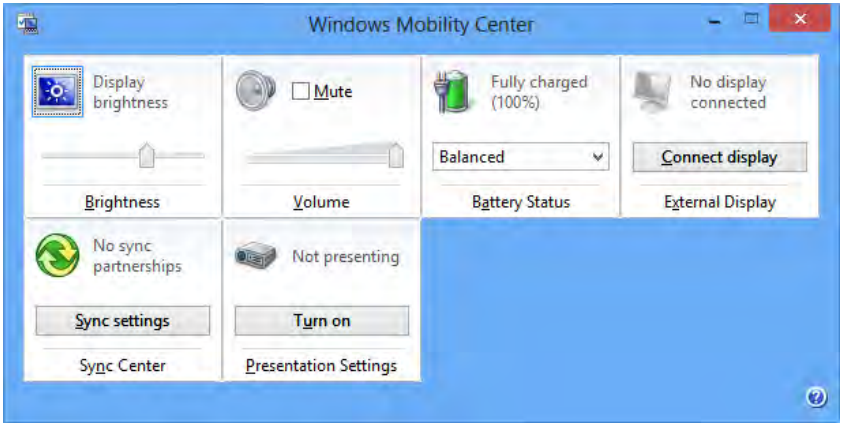


Figure 3 - 10
Windows Mobility Center

Battery Life

Battery life may be shortened through improper maintenance. **To optimize the life and improve its performance, fully discharge and recharge the battery at least once every 30 days**.

We recommend that you do not remove the battery yourself. If you do need to remove the battery for any reason (e.g. long term storage) see ***"Removing the Battery" on page 6 - 4***.

New Battery

Always completely discharge, then fully charge, a new battery (see ***"Battery FAQ" on page 3 - 17*** for instructions on how to do this).

Recharging the Battery with the AC/DC Adapter

The battery pack automatically recharges when the AC/DC adapter is attached and plugged into an electrical outlet. If the computer is powered on, and in use, it will take several hours to fully recharge the battery. When the computer is turned off but plugged into an electrical outlet, battery charge time is less. Refer to ***"LED Indicators" on page 1 - 9*** for information on the battery charge status, and to ***"Battery Information" on page 3 - 13*** for more information on how to maintain and properly recharge the battery pack.

Caution

Danger of explosion if battery is incorrectly replaced.

Replace only with the same or equivalent type recommended by the manufacturer. Discard used battery according to the manufacturer's instructions.

Proper handling of the Battery Pack

- DO NOT disassemble the battery pack under any circumstances
- DO NOT expose the battery to fire or high temperatures, it may explode
- DO NOT connect the metal terminals (+, -) to each other

Damaged Battery Warning

Should you notice any physical defects (e.g. the battery is bent out of shape after being dropped), or any unusual smells emanating from the notebook battery, shut your computer down immediately and contact your distributor/supplier. If the battery has been dropped we do not recommend using it any further, as even if the computer continues to work with a damaged battery in place, it may cause circuit damage, which may possibly result in fire. It is recommended that you replace your computer battery every two years.

Battery FAQ

How do I completely discharge the battery?

Use the computer with battery power until it shuts down due to a low battery. Don't turn off the computer even if a message indicates the battery is critically low, just let the computer use up all of the battery power and shut down on its own.

1. Save and close all files and applications.
2. **Create** a **power plan** for discharging the battery and set all the options to **Never**.

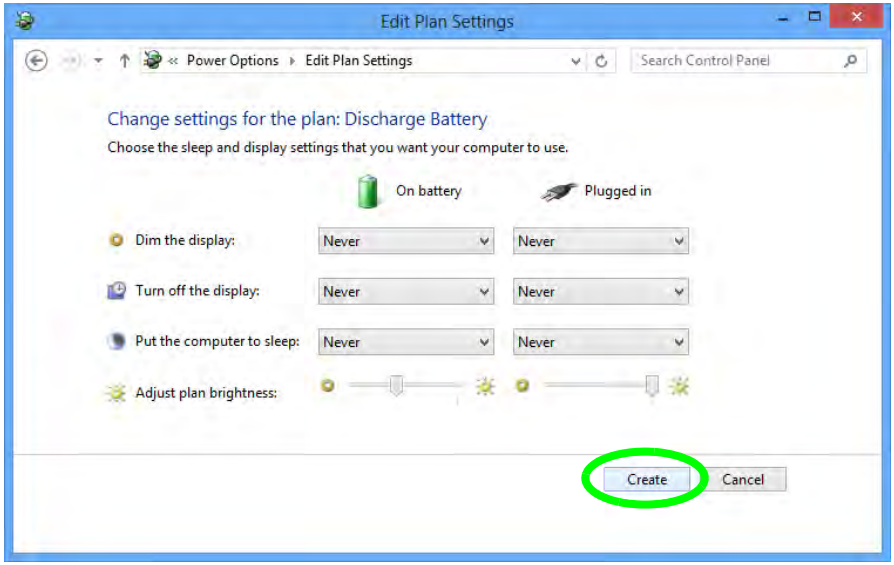


Figure 3 - 11
Power Plan Create

3. Click ***Change plan settings*** (after creating it) and click ***Change plan settings > Change advanced power settings***.

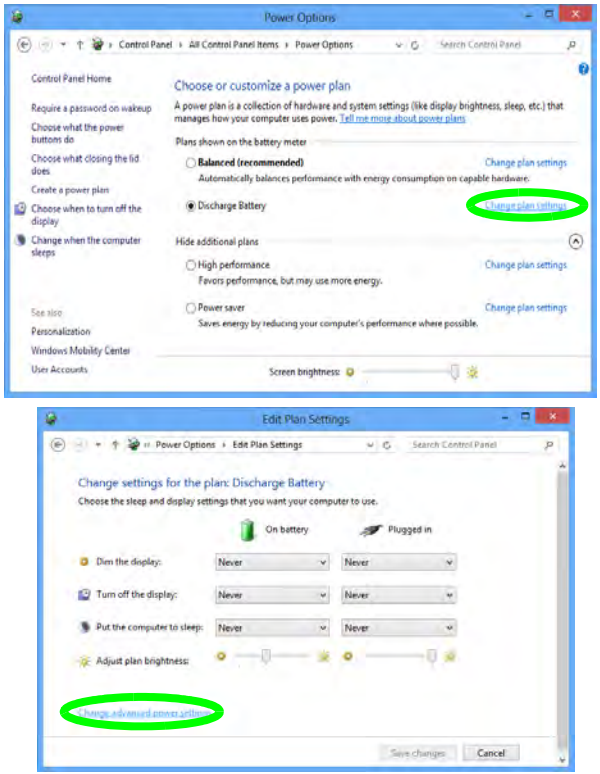

Power Options
Control Panel Home
Require a password on wakeup
Choose what the power buttons do
Choose what closing the lid does
Create a power plan
Choose when to turn off the display
Change when the computer sleeps
Choose or customize a power plan
A power plan is a collection of hardware and system settings (like display brightness, sleep, etc.) that manages how your computer uses power.
Plans shown on the battery meter
Balanced (recommended)
Automatically balances performance with energy consumption on capable hardware.
Change plan settings
Discharge Battery
Hide additional plans
High performance
Favors performance, but may use more energy.
Power saver
Saves energy by reducing your computer's performance where possible.
See also
Personalization
Windows Mobility Center
User Accounts
Screen brightness:
Edit Plan Settings
Change settings for the plan: Discharge Battery
Choose the sleep and display settings that you want your computer to use.
On battery
Plugged in
Dim the display:
Turn off the display:
Put the computer to sleep:
Adjust plan brightness:
Never
Change advanced power settings
Save changes
Cancel

Figure 3 - 12
Change Plan Settings / Change Advanced Power Settings

4. Scroll down to **Battery** and click **+** to expand the battery options.
5. Choose the options below (click **Yes** if a warning appears):

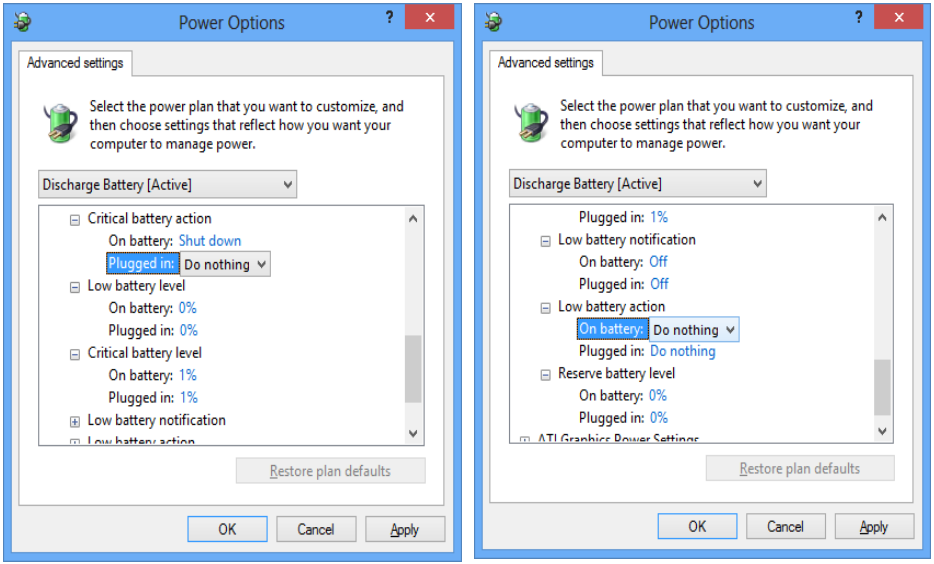


Figure 3 - 13
Power Options Advanced Settings - Battery

- Low battery levels = 0%
- Critical battery Levels = 1%
- Low battery action = Do Nothing
- Critical battery action (On battery) = Shut Down
- Critical battery action (Plugged in) = Do Nothing

How do I fully charge the battery?
When charging the battery, don't stop until the LED charging indicator light changes from orange to green.

How do I maintain the battery?
Completely discharge and charge the battery at least once every 30 days or after about 20 partial discharges.

Chapter 4: Drivers & Utilities

This chapter deals with installing the drivers and utilities essential to the operation or improvement of some of the computer's subsystems. The system takes advantage of some newer hardware components for which the latest versions of most available operating systems haven't built in drivers and utilities. Thus, some of the system components won't be auto-configured with an appropriate driver or utility during operating system installation. Instead, you need to manually install some system-required drivers and utilities.

What to Install

The ***Device Drivers & Utilities + User's Manual*** disc contains the drivers and utilities necessary for the proper operation of the computer. ***Table 4 - 1, on page 4 - 3*** lists what you need to install and **it is very important that the drivers are installed in the order indicated**.

Module Driver Installation

The procedures for installing drivers for the **PC Camera, WLAN** and **Combination Bluetooth & WLAN** modules (you should also install the **Sound Blaster Cinema, Intel Technology** drivers as instructed in Chapter 7) are provided in ***"Modules" in Chapter 7***.

Driver Installation & Power

When installing drivers make sure your computer is powered by the AC/DC adapter connected to a working power source. Some drivers draw a significant amount of power during the installation procedure, and if the remaining battery capacity is not adequate this may cause the system to shut down and cause system problems (note that there is no safety issue involved here, and the battery will be rechargeable within 1 minute).

Driver Installation

1. Insert the *Device Drivers & Utilities + User's Manual* disc into the computer's DVD drive.
2. Click the message "**Tap to choose what happens with this disc**."
3. Click **Run autorun.exe**.
4. Click ***Install Drivers*** (button), or ***Option Drivers*** (button) to access the **Optional** driver menu.
5. Check the driver installation order from ***Table 4 - 1, on page 4 - 3*** (the drivers must be installed in this order) which is the same as that listed in the *Drivers Installer* menu below.
6. Click to select the driver you wish to install, (you should note down the drivers as you install them).
7. Follow the instructions for each individual driver installation procedure as listed on the following pages.

Figure 4 - 1 **- Drivers Installer Screen 1**

Figure 4 - 2 **- Install Drivers**

Win 8 System Driver	Page #	Optional	Page #
Chipset	*Page 4 - 6*	*Setting Up SATA RAID or AHCI Mode*	*Page 7 - 2*
Video (VGA)	*Page 4 - 6*	*PC Camera Module* (No driver required)	*Page 7 - 11*
NVIDIA Video (VGA)	*Page 4 - 6*	*Wireless LAN Module*	*Page 7 - 19*
LAN	*Page 4 - 6*	*Fingerprint Reader Module* (**Model A** Computers Only)	*Page 7 - 27*
Card Reader	*Page 4 - 6*	*Bluetooth & WLAN Combo Module*	*Page 7 - 51*
TouchPad	*Page 4 - 6*	*Intel® Rapid Storage Technology* (required for hard disks in AHCI mode)	*Page 7 - 57*
Airplane	*Page 4 - 7*	*Intel® Rapid Start Technology Driver*	*Page 7 - 63*
Hot Key	*Page 4 - 7*	*Intel® Wireless Display Application*	*Page 7 - 71*
MEI Driver	*Page 4 - 7*	*Sound Blaster Cinema EQ*	*Page 7 - 76*
Audio	*Page 4 - 7*	*3G Module* (**Model A** Computers Only - No driver required)	*Page 7 - 81*

Table 4 - 1 **- Driver Installation**

All drivers provided are for the Windows 8 operating system.

Note that you need to install both the WLAN & Bluetooth drivers for the WLAN & Bluetooth Combo modules.

Manual Driver Installation

Click ***Browse CD/DVD*** (button) in the *Drivers Installer* application and browse to the executable file in the appropriate driver folder.

Windows Update

After installing all the drivers make sure you enable **Windows Update** in order to get all the latest security updates etc. (all updates will include the latest **hotfixes** from Microsoft). See ***"Windows Update" on page 4 - 8*** for instructions.

Updating/Reinstalling Individual Drivers

If you wish to update/reinstall individual drivers it may be necessary to uninstall the original driver.To do this go to the **Control Panel** in the ***Windows OS*** and double-click the **Programs and Features** icon (**Programs** > **Uninstall a program**). Click to select the driver (if it is not listed see below) and click **Uninstall**, and then follow the on screen prompts (it may be necessary to restart the computer). Reinstall the driver as outlined in this chapter.

If the driver is not listed in the **Programs and Features** menu:

1. Go to the **Control Panel**).
2. Double-click **Device Manager** (**Hardware and Sound > Devices and Printers > Device Manager**).
3. Double-click the **device** you wish to update/reinstall the driver for (you may need to click "+" to expand the selection).
4. Click **Driver** (tab) and click the **Update Driver** or **Uninstall** button and follow the on screen prompts.

User Account Control

If a **User Account Control** prompt appears as part of the driver installation procedure, click **Continue** or **Allow**, and follow the installation procedure as directed.

Windows Security Message

If you receive a ***Windows*** security message as part of the driver installation process. Just click ***"Install this driver software anyway"*** or ***"Install"*** to continue the installation procedure.

You will receive this message in cases where the driver has been released after the version of ***Windows*** you are currently using. All the drivers provided will have already received certification for ***Windows***.

New Hardware Found

If you see the message "**New Hardware Found**" during the installation procedure (**other than when outlined in the driver install procedure**), click **Cancel** to close the window, and follow the installation procedure.

Driver Installation General Guidelines

The driver installation procedure outlined in this Chapter (and in **Chapter 7 Options & Modules**), are accurate at the time of going to press.

Drivers are always subject to upgrade and revision so the exact procedure for certain drivers may differ slightly. As a general guide follow the default on screen instructions for each driver (e.g. **Next > Next > Finish**) unless you are an advanced user. In many cases a restart is required to install the driver.

Make sure any modules (e.g. WLAN or Bluetooth) are **ON (i.e. the system is not in Airplane Mode)** before installing the appropriate driver.

Driver Installation Procedure

Insert the *Device Drivers & Utilities + User's Manual* disc and click ***Install Drivers*** (button), or ***Option Drivers*** (button) to access the **Optional** driver menu.

Chipset

1. Click **1.Install Chipset Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

Video (VGA)

1. Click **2.Install VGA Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

NVIDIA Video (VGA)

1. Click **3.Install NVIDIA VGA Driver > Yes**.
2. Click **AGREE AND CONTINUE (**button) to accept the terms of the license agreement.
3. Click **Next.**
4. Click **Close** to complete the installation.

Note: After installing the video driver go to the **Display**/**Display Settings** control panel to adjust the video settings to the highest resolution.

LAN

1. Click **4.Install LAN Driver > Yes**.
2. Click **Next > Install**.
3. Click **Finish**.

Card Reader

1. Click **5.Install Cardreader Driver > Yes**.
2. Click **Finish**.

TouchPad

1. Click **6.Install Touchpad Driver > Yes**.
2. Click **Next**.
3. Click the button to accept the license, and then click **Next**.
4. Click **Finish > Restart Now** to restart the computer.

Airplane

1. Click **7.Install Airplane AP > Yes**.
2. Click **Next**.
3. Click **Finish** to restart the computer.

Hot Key

1. Click **8.Install Hotkey AP > Yes**.
2. Click **Next > Next**.
3. Click **Finish > Finish** to restart your computer.

MEI Driver

1. Click **9.Install MEI Driver > Yes**.
2. Click **Next > Yes > Next**.
3. Click **Finish**.

Audio

1. Click **10.Install Audio Driver > Yes**.
2. Click **Next**.
3. Click the button to agree to the license and click **Next**.
4. Click **Next > Next > Next**.
5. Click **Finish** to restart the computer.

After installing the audio driver the system will not return to the **Drivers Installer** screen. To install any of the optional drivers, eject the *Device Drivers & Utilities + User's Manual* disc and then reinsert it (or double-click the disc icon in My Computer), and click **Option Drivers** (button) to access the optional driver menu.

It is recommended that you install the **Sound Blaster Audio** application for maximum audio performance (see ***"Sound Blaster Cinema EQ" on page 7 - 76***) and **Intel Rapid Storage Technology** driver (see ***"Intel® Rapid Storage Technology" on page 7 - 57*** - required for AHCI or RAID mode).

Windows Experience Index

After the drivers are installed follow this procedure to ensure an accurate rating from the ***Windows Experience Index*** (make sure the AC/DC adapter is plugged in):

1. Go to the **Control Panel**.
2. Click **Performance Information and Tools** (**System and Security > System > Windows Experience Index**).
3. Click "**Rate this computer/Refresh Now/Re-run the assessment**".
4. The computer will take a few minutes to assess the system performance.
5. Close the control panel.

Windows Update

After installing all the drivers make sure you enable **Windows Update** in order to get all the latest security updates etc. (all updates will include the latest **hotfixes** from Microsoft).

To enable **Windows Update make sure you are connected to the internet**:

1. Go to the **Control Panel**.
2. Click **Windows Update** (System and Security/ Security).
3. Click **Check for updates** (button).
4. The computer will now check for updates (you need to be connected to the internet).
5. Click **Install now** (button) to begin checking for the updates.
6. Click **Install updates** (button) to install the updates.

Optional Drivers

See the pages indicated in ***Table 4 - 1, on page 4 - 3*** for the driver installation procedures for any modules included in your purchase option.

Figure 4 - 3 **- Optional Drivers Installer Screen**

Note that you need to install both the WLAN & Bluetooth drivers for all the Bluetooth Combo modules.

Chapter 5: BIOS Utilities

Overview

This chapter gives a brief introduction to the computer's built-in software:

Diagnostics: The **POST** (Power-On Self Test)

Configuration: The ***Setup*** utility
If your computer has never been set up, or you are making important changes to the system (e.g. hard disk setup), then you should review this chapter first and note the original settings found in ***Setup***. Even if you are a beginner, keep a record of the settings you find and any changes you make. This information could be useful if your system ever needs servicing.

There is one general rule: *Don't make any changes unless you are sure of what you are doing*. Many of the settings are required by the system, and changing them could cause it to become unstable or worse. If you have any doubts, consult your service representative.

BIOS Screens

Note that the BIOS screens pictured on these pages are intended for guidance in setting up your system's BIOS.

BIOS versions are subject to constant change and revision, therefore your computer's actual screens may appear slightly different from those pictured on these pages.

The Power-On Self Test (POST)

If you enable the **Boot-time Diagnostic Screen** in the Setup Utility, each time you turn on the computer the system takes a few seconds to conduct a **POST**, including a quick test of the on-board RAM (memory).

As the **POST** proceeds, the computer will tell you if there is anything wrong. If there is a problem that prevents the system from booting, it will display a system summary and prompt you to run ***Setup***.

If there are no problems, the ***Setup*** prompt will disappear and the system will load the operating system. Once that starts, you can't get into ***Setup*** without rebooting.

Failing the POST

Errors can be detected during the **POST**. There are two categories, “fatal” and “non-fatal”.

Fatal Errors

These stop the boot process and usually indicate there is something seriously wrong with your system. Take the computer to your service representative or authorized distributor/supplier as soon as possible.

Non-Fatal Errors

This kind of error still allows you to boot. You will get a message identifying the problem (make a note of this message!) and you can then press **F7** (the **F7** on screen will be highlighted to illustrate that the system is processing the request) for boot options.

Press **F2** (give the system a few seconds to enter ***Setup***; the **F2** on screen will be highlighted to illustrate that the system is processing the request) to run the **Setup** program and try to correct the problem. If you still get an error message after you change the setting, or if the “cure” seems even worse, call for help.

BIOS Settings Warning

Incorrect settings can cause your system to malfunction. To correct mistakes, return to *Setup* and restore the ***Previous Values*** with <**F2**>, or **Optimized Defaults** with <**F3**>.

The Setup Utility

The **Aptio Setup Utility** tells the system how to configure itself and manage basic features and subsystems (e.g. port configuration).

Entering Setup

To enter ***Setup***, turn on the computer and press **F2** (give the system a few seconds to enter ***Setup***; the **F2** on screen will be highlighted to illustrate that the system is processing the request) during the **POST** (or press **F7** for boot options). If you get a "Keyboard Error", (usually because you pressed **F2** too quickly) just press **F2** again.

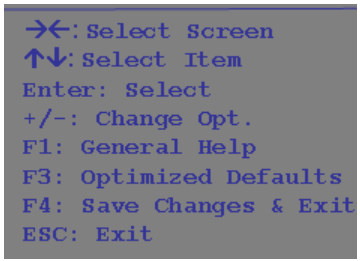
If the computer is already on, reboot using the **Ctrl + Alt + Delete** combination and then hold down **F2** when prompted. The ***Setup*** main menu will appear.

To see the boot options press **F7.**

Setup Screens

The following pages contain additional advice on portions of the ***Setup***. Along the top of the screen is a menu bar with menu headings. When you select a heading, a new screen appears. Scroll through the features listed on each screen to make changes to ***Setup***.

Instructions on how to navigate each screen are in the box at the bottom right side of the screen.



If these tools are confusing, press **F1** to call up a **General Help** screen, and then use the arrow keys to scroll up or down the page.

The **Item Specific Help** on the upper right side of each screen explains the highlighted item and has useful messages about its options.

If you see an arrow ▶ next to an item, press **Enter** to go to a sub-menu on that subject. The sub-menu screen that appears has a similar layout, but the **Enter** key may execute a command.

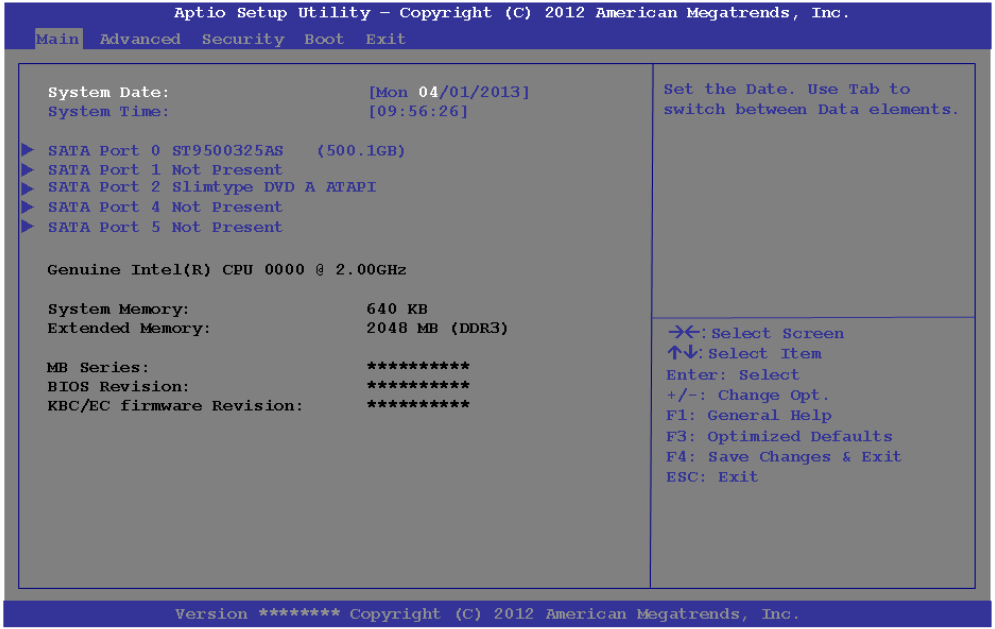
Setup Menus

The **Setup** menus shown in this section are for **reference** only. Your computer's menus will indicate the configuration appropriate for your model and options.

Figure 5 - 1
Navigation Menu

Main Menu

Figure 5 - 2
Main Menu


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced Security Boot Exit
System Date: [Mon 04/01/2013]
System Time: [09:56:26]
SATA Port 0 ST9500325AS (500.1GB)
SATA Port 1 Not Present
SATA Port 2 Slimtype DVD A ATAPI
SATA Port 4 Not Present
SATA Port 5 Not Present
Genuine Intel(R) CPU 0000 @ 2.00GHz
System Memory: 640 KB
Extended Memory: 2048 MB (DDR3)
MB Series: **********
BIOS Revision: **********
KBC/EC firmware Revision: **********
Set the Date. Use Tab to switch between Data elements.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save Changes & Exit
ESC: Exit
Version ******** Copyright (C) 2012 American Megatrends, Inc.

System Time & Date (Main Menu)
The hour setting uses the 24-hour system (i.e., ØØ = midnight; 13 = 1 pm). If you can change the date and time settings in your operating system, you will also change these settings. Some applications may also alter data files to reflect these changes.

SATA Port # (Main Menu)
Pressing **Enter** opens the sub-menu to show the configuration of a optical Device/ HDD on the computer's SATA Ports.

System/Extended Memory (Main Menu)
This item contains information on the system memory, and is not user configurable. The system will auto detect the amount of memory installed.

MB Series / BIOS Revision / KBC/EC Firmware Revision (Main Menu)
This item contains information on the BIOS version and video card etc., and is not user configurable.

Advanced Menu

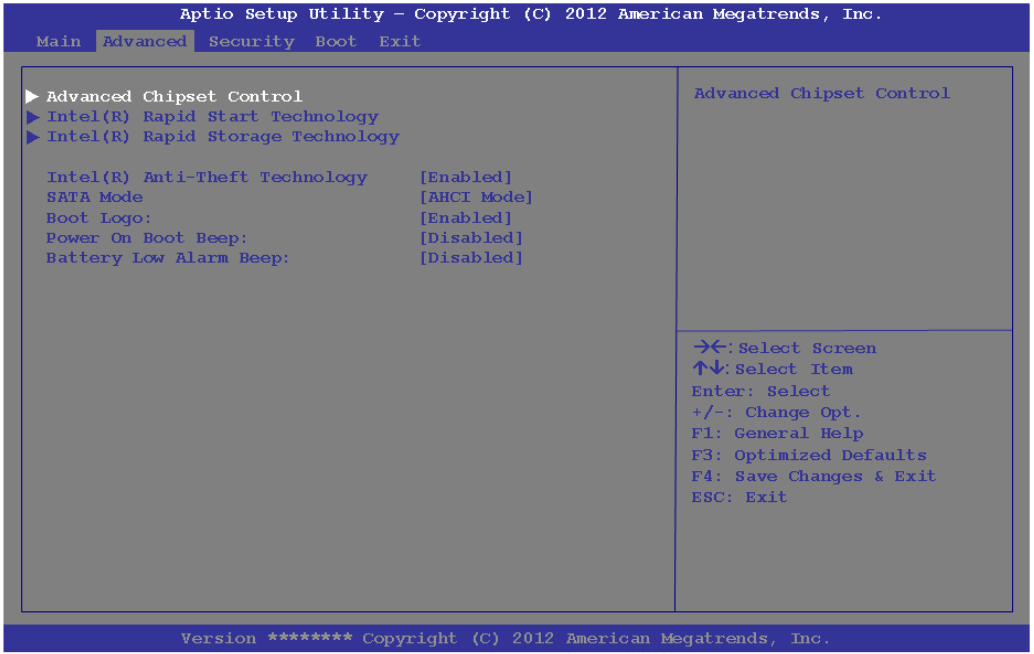

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced Security Boot Exit
Advanced Chipset Control
Intel(R) Rapid Start Technology
Intel(R) Rapid Storage Technology
Intel(R) Anti-Theft Technology [Enabled]
SATA Mode [AHCI Mode]
Boot Logo: [Enabled]
Power On Boot Beep: [Disabled]
Battery Low Alarm Beep: [Disabled]
Advanced Chipset Control
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save Changes & Exit
ESC: Exit
Version ******** Copyright (C) 2012 American Megatrends, Inc.

Figure 5 - 3
Advanced Menu

Advanced Chipset Control (Advanced Menu)
The sub-menu here allows you to adjust the **Bluetooth Power Setting**.

Bluetooth Power Setting (Advanced Menu > Advanced Chipset Control)
You can adjust the Bluetooth module power setting to your preference. The default setting (**Disabled**) will see the Bluetooth module powered off when the system is started up or restarted. Enabling the power setting will have the module retain the last power status (on or off) before any restart or shut down.

Intel(R) Rapid Start Technology (Advanced Menu)
Enable/disable **Intel(R) Rapid Start Technology** from this menu. The rapid start hibernation mode can resume power within 5 to 6 seconds and can remember your computer's state with zero power.

Intel(R) Rapid Storage Technology (Advanced Menu)
Enable/disable **Intel(R) Rapid Storage Technology** from this menu to provide high-performance SATA RAID capabilities for ***Windows 8***. Note that this menu item will be available if **UEFI Boot is enabled** (in the OS Select sub-menu) and the **SATA Mode** (Advanced Menu) is set to **RAID** (see below). See ***"Setting Up SATA RAID or AHCI Mode" on page 7 - 2***.

SATA Mode Selection

If you have installed the ***Windows*** operating system with either **IDE**, **AHCI or RAID** mode enabled, **DO NOT** disable the set mode (if you wish to disable the set mode you will need to reinstall the ***Windows*** OS).

Intel Anti-Theft Technology (Advanced Menu)

Anti-Theft Technology, which is built-in to the processor of the computer, allows system administrators to render your computer useless to thieves by sending a poison pillencrypted SMS message over a 3G network etc. Administrators can also remotely unlock a recovered computer quickly, or direct the system to send location information (GPS coordinates) back to a central server.

SATA Mode (Advanced Menu)

You can configure SATA (Serial ATA) control to operate in **IDE** (native/compatible), **AHCI** (Advanced Host Controller Interface) or **RAID** (Redundant Array of Independent disks) modes from this menu. The **SATA Mode** should be set **BEFORE installing an operating system**, and after you have backed up all necessary files and data (see sidebar). See ***"Setting Up SATA RAID or AHCI Mode" on page 7 - 2*** for details.

Make sure you install the **Intel Rapid Storage Technology application** if you have set the SATA Mode to **RAID** or **AHCI** (see ***"Intel® Rapid Storage Technology" on page 7 - 57***).

Boot Logo (Advanced Menu)
Use this menu item to enable/disable the **Boot Logo** screen at system startup **if you have not enabled UEFI Boot**. If you disable the **Boot Logo** you will not see the **F2 Enter Setup** or **F7 Boot Options** prompts on the screen, however you can still press these keys, while the boot screen is displayed, to perform the Enter Setup or Boot Option functions.

When **UEFI Boot is enabled**, then the prompts to press **F2 or F7** will not appear. However you can still press **F2** to enter the setup, or **F7** to choose the preferred boot device, if you press the key immediately the system boots up.

Power On Boot Beep (Advanced Menu)
Use this menu item to enable/disable the beep as the computer starts up.

Battery Low Alarm Beep (Advanced Menu)
Use this menu item to enable/disable the battery low alarm beep.

Security Menu

The changes you make here affect the access to the **Setup** utility itself, and also access to your machine as it boots up after you turn it on. These settings do not affect your machine or network passwords which will be set in your software OS.

Security Menu

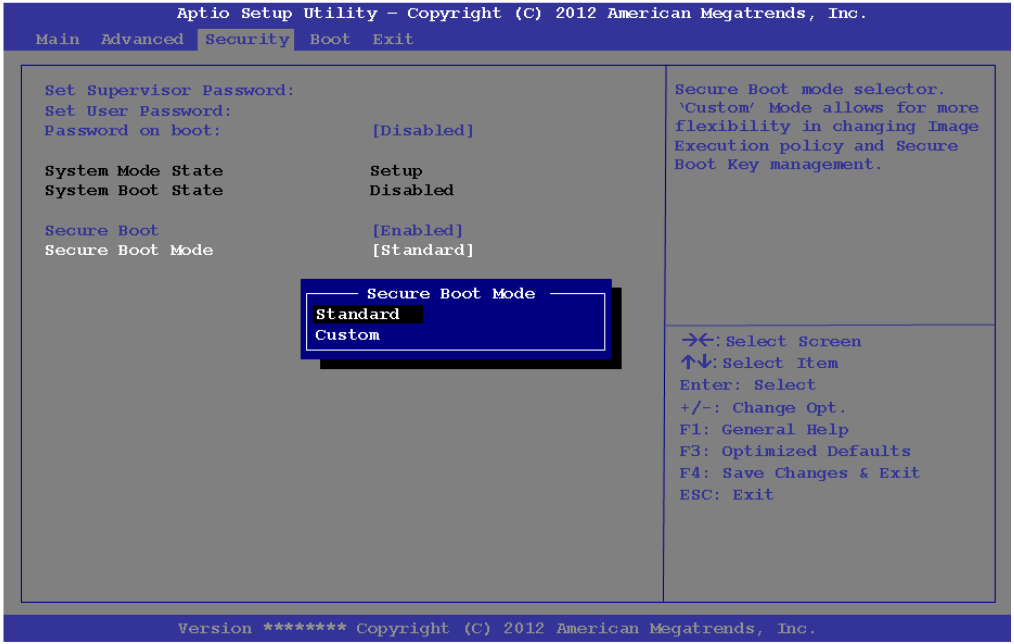

Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced Security Boot Exit
Set Supervisor Password:
Set User Password:
Password on boot: [Disabled]
System Mode State Setup
System Boot State Disabled
Secure Boot [Enabled]
Secure Boot Mode [Standard]
Secure Boot Mode
Standard
Custom
Secure Boot mode selector. 'Custom' Mode allows for more flexibility in changing Image Execution policy and Secure Boot Key management.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save Changes & Exit
ESC: Exit
Version ******** Copyright (C) 2012 American Megatrends, Inc.

Figure 5 - 4
Security Menu

Set Supervisor Password (Security Menu)
You can set a password for access to the **Aptio Setup Utility**. This will not affect access to the computer OS (only the **Aptio Setup Utility**).

Note: To clear existing passwords press **Enter** and type the existing password, then press **Enter** for the new password (without typing any password entry) and **Enter** again to confirm the password clearance.

Note: *You can only set the user password after you have set the supervisor password.*

Password on boot: (Security Menu)
Specify whether or not a password should be entered to boot the computer (**you may only set a password on boot if a supervisor password is enabled**). If "***Enabled***" is selected, only users who enter a correct password can boot the system (**see the warning in the sidebar**). The default setting is "***Disabled***".

Secure Boot (Security Menu)
Secure Boot prevents unauthorized operating systems and software from loading during the startup process. **Secure Boot** is available as a menu option if you have ***Windows 8*** set as your operating system, and have **enabled UEFI Boot** (see ***"Boot Menu" on page 5 - 14***). Enabling Secure Boot will bring up the **Secure Boot Mode** menu to enable you to configure Secure Boot as **Standard** (with a fixed secure boot policy), or **Custom** (which enables you to make changes to the **Image Execution Policy** and **Key Management** database).

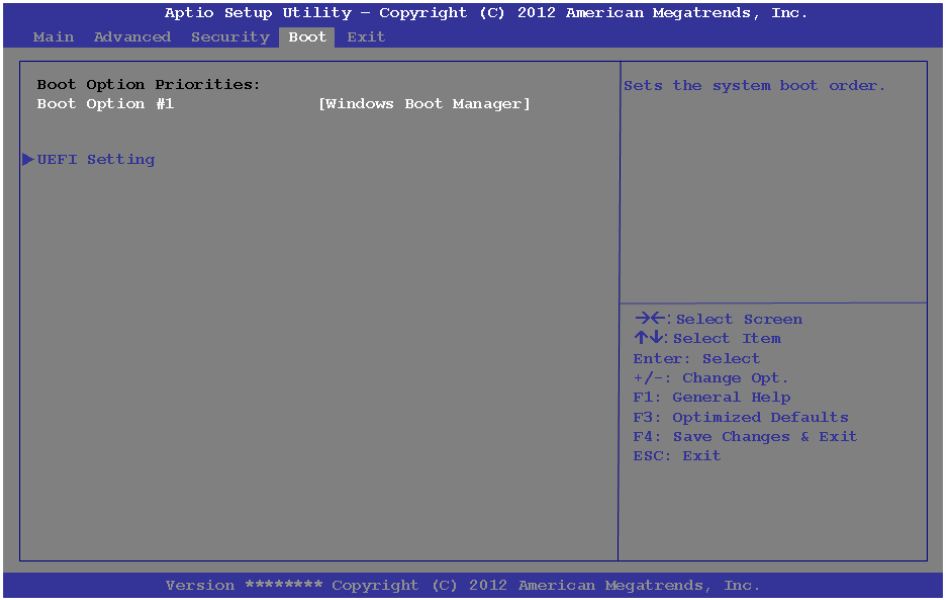
Password Warning

If you set a boot password (Password on boot is "Enabled"), **NEVER** forget your password.

The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

Boot Menu

Figure 5 - 5
Boot Menu


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced Security Boot Exit
Boot Option Priorities:
Boot Option #1 [Windows Boot Manager]
UEFI Setting
Sets the system boot order.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save Changes & Exit
ESC: Exit
Version ******** Copyright (C) 2012 American Megatrends, Inc.

BIOS Screens

Note that the BIOS screens pictured on these pages are intended for guidance in setting up your system's BIOS.

BIOS versions are subject to constant change and revision, therefore your computer's actual screens may appear slightly different from those pictured on these pages.

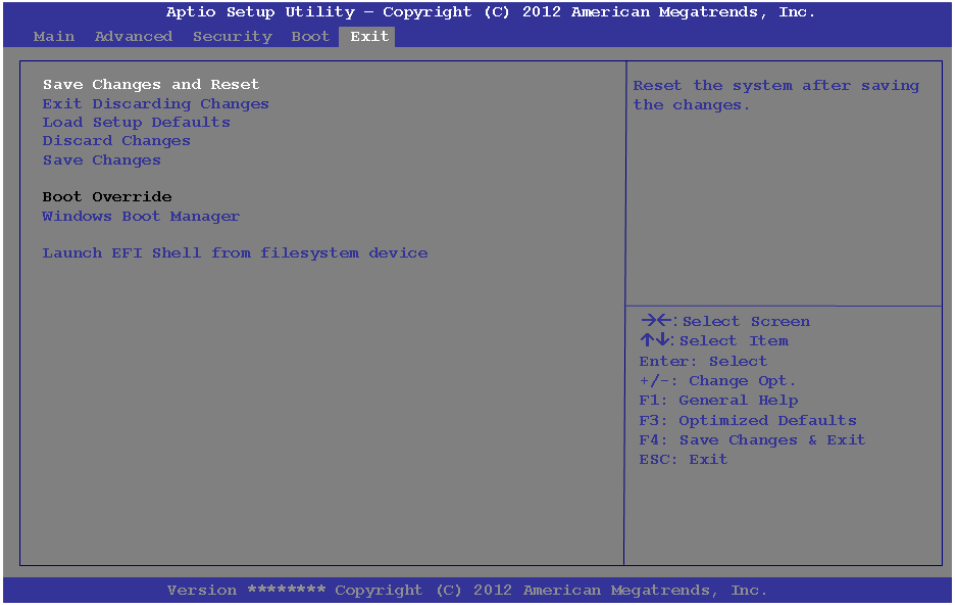
When you turn the computer on it will look for an operating system (e.g. ***Windows 7***) from the devices listed in this menu, and **in this priority order**. If it cannot find the operating system on that device, it will try to load it from the next device in the order specified in the **Boot Option Priorities**. Item specific help on the right is available to help you move devices up and down the order.

Boot Option Priorities (Boot Menu)
Use the arrow keys to move up and down the menu, and press enter to select a device from the menu (the selected device will be highlighted in white).

UEFI Boot (Boot Menu > OS Select)
Enable/disable UEFI Boot from this menu. The Unified Extensible Firmware Interface (UEFI) specification provides a clean interface between operating systems and platform firmware at boot time. In contrast to BIOS, UEFI defines a set of standard boot and runtime services. The ***Network Stack*** item will be enabled as an option under UEFI Boot.

Exit Menu

Figure 5 - 6
Exit Menu


Aptio Setup Utility – Copyright (C) 2012 American Megatrends, Inc.
Main Advanced Security Boot Exit
Save Changes and Reset
Exit Discarding Changes
Load Setup Defaults
Discard Changes
Save Changes
Boot Override
Windows Boot Manager
Launch EFI Shell from filesystem device
Reset the system after saving the changes.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save Changes & Exit
ESC: Exit
Version ******** Copyright (C) 2012 American Megatrends, Inc.

Click ***Save Changes and Reset*** to save all changes made. Choosing to ***Discard Changes***, or ***Exit Discarding Changes***, will wipe out any changes you have made to the ***Setup***. You can also choose to restore the original ***Setup*** defaults that will return the ***Setup*** to its original state, and erase any previous changes you have made in a previous session.

Chapter 6: Upgrading The Computer

Overview

This chapter contains information on upgrading the computer. Follow the steps outlined to make the desired upgrades. If you have any trouble or problems you can contact your service representative for further help. Before you begin you will need:

- A small crosshead or Phillips screwdriver
- A small regular slotted (flathead) screwdriver
- An antistatic wrist strap

Before working with the internal components you will need to wear an antistatic wrist strap to ground yourself because static electricity may damage the components.

The chapter includes:

- Removing the Battery
- Removing the Component Bay Cover
- Upgrading the Hard Disk Drive(s)
- Upgrading the Optical (CD/DVD) Device
- Upgrading the System Memory (RAM)

Please make sure that you review each procedure before you perform it.

Warranty Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.

Power Safety Warning

Before you undertake any upgrade procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines).

You must also remove your battery in order to prevent accidentally turning the machine on. **Before removing the battery disconnect the AC/DC adapter from the computer.**

When Not to Upgrade

These procedures involve opening the system's case, adding and sometimes replacing parts.You should **not** perform any of these upgrades if:

- Your system is still under warranty or a service contract
- You don't have all the necessary equipment
- You're not in the correct environment
- You doubt your abilities

Under any of these conditions, contact your service representative to purchase or replace the component(s).

Removal Warning

When removing any cover(s) and screw(s) for the purposes of device upgrade, remember to replace the cover(s) and screw(s) before turning restoring power to the system.

Also note the following when the cover is removed:

- Hazardous moving parts.
- Keep away from moving fan blades.

Upgrading the Processor

If you want to upgrade your computer by replacing the existing processor with a faster/new one you will need to contact your customer service representative. We recommend that you do not do this yourself, since if it is done incorrectly you may damage the processor or mainboard.

Warranty Warning

Please check with your service representative before undertaking any upgrade procedures to find out if this will VOID your warranty.

Removing the Battery

If you are confident in undertaking upgrade procedures yourself, for safety reasons it is best to remove the battery. **Before removing the battery disconnect the AC/DC adapter from the computer first**.

1. Turn the computer off, remove the AC/DC adapter and turn it over.
2. Slide the latch 1 in the direction of the arrow.
3. Slide the latch 2 in the direction of the arrow and the battery will pop up.
4. Lift the battery 3 out of the compartment.

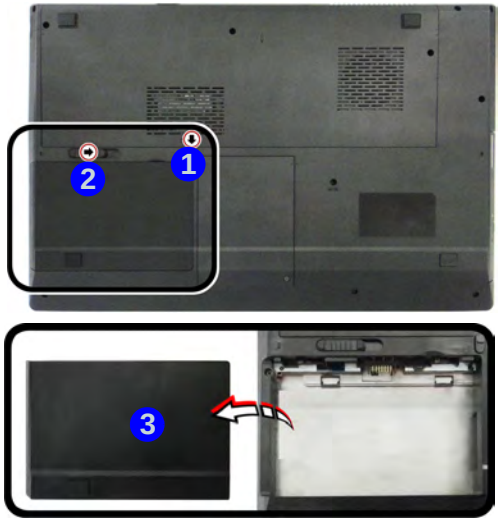


Figure 6 - 1
Battery Removal

Note that though only **Model B** is pictured, the battery removal procedure is identical for both computer models.

Removing the Component Bay Cover

1. Turn **off** the computer, and turn it over and remove the battery.
2. Locate the component bay cover and remove screws 1 - 3.

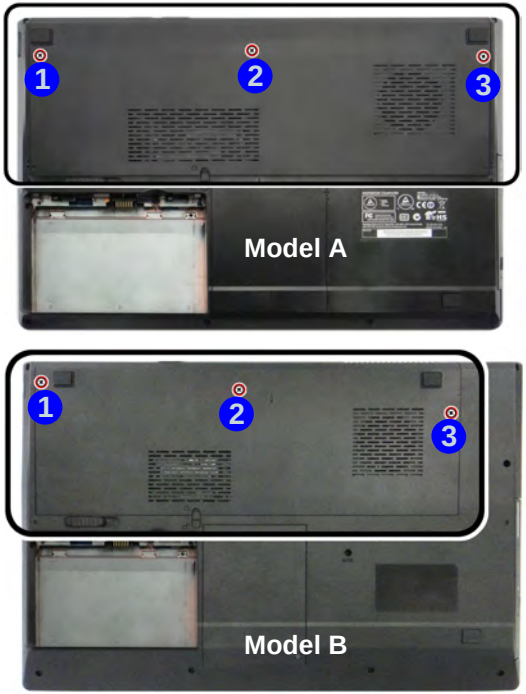


Figure 6 - 2
Component Bay Cover Screws

3. Slide the cover in the direction of arrow 4, until the case markers 5 line up.
4. Remove the component bay cover 6.

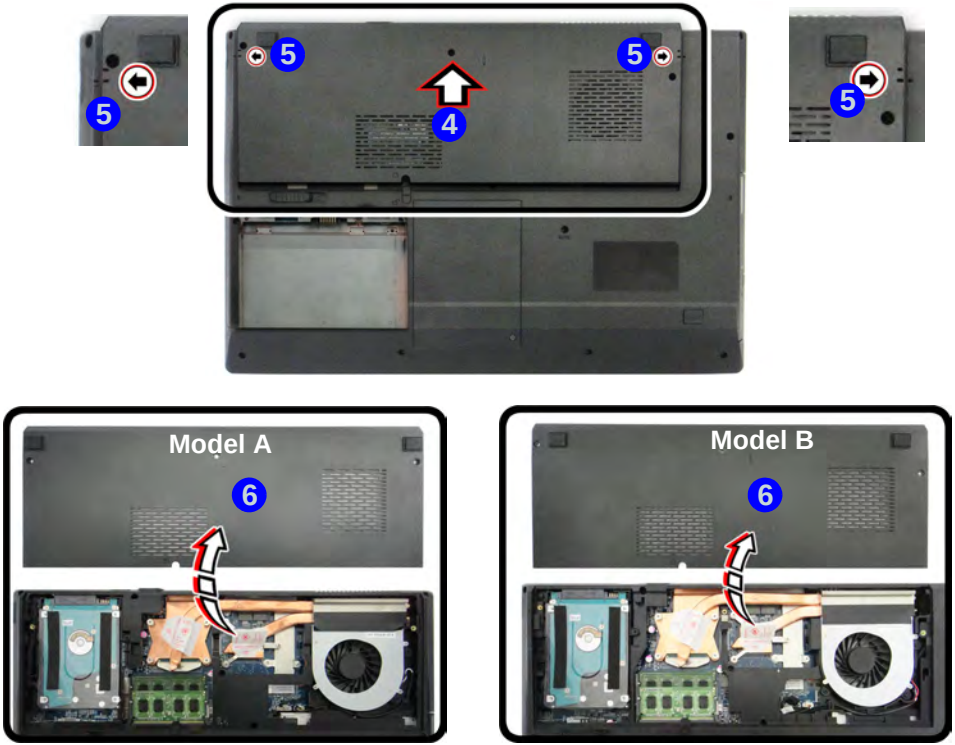


Figure 6 - 3
Component Bay Cover Removal

Replacing the Component Bay Cover

1. Reinsert the component bay cover by placing it on the bottom case assembly and sliding it on to the case in the direction of arrow 7.
2. Make sure the case markers 8 line up.
3. Replace screws 1 - 3 (*Figure 6 - 2 on page 6 - 5*).

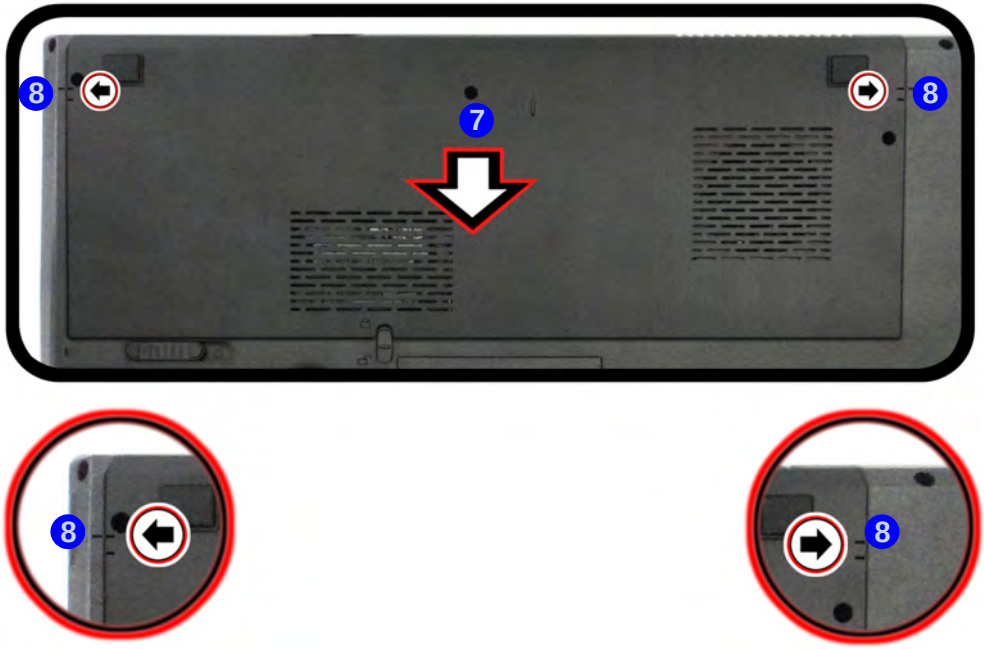


Figure 6 - 4
Component Bay Cover Replacement

Upgrading the Hard Disk Drive(s)

HDD System Warning

New HDD's are blank. Before you begin make sure:
You have backed up any data you want to keep from your old HDD.
You have all the CD-ROMs and FDDs required to install your operating system and programs.
If you have access to the internet, download the latest application and hardware driver updates for the operating system you plan to install. Copy these to a removable medium.

The hard disk Drive(s) can be taken out to accommodate up to two other 2.5" serial (SATA) hard disk drives with a height of 9.5mm (h) (see *"Storage" on page D - 2*). Follow your operating system's installation instructions, and install all necessary drivers and utilities (as outlined in *"Drivers & Utilities" on page 4 - 1*), when setting up a new hard disk.

Removing the Hard Disk from the Primary HDD Bay

1. Turn **off** the computer, and turn it over and remove the battery (see page *6 - 4*).
2. Remove screw 1.
3. Slide the HDD cover in the direction of arrow 2 until the case markers 3 line up.
4. Lift the HDD cover out of the computer 4.

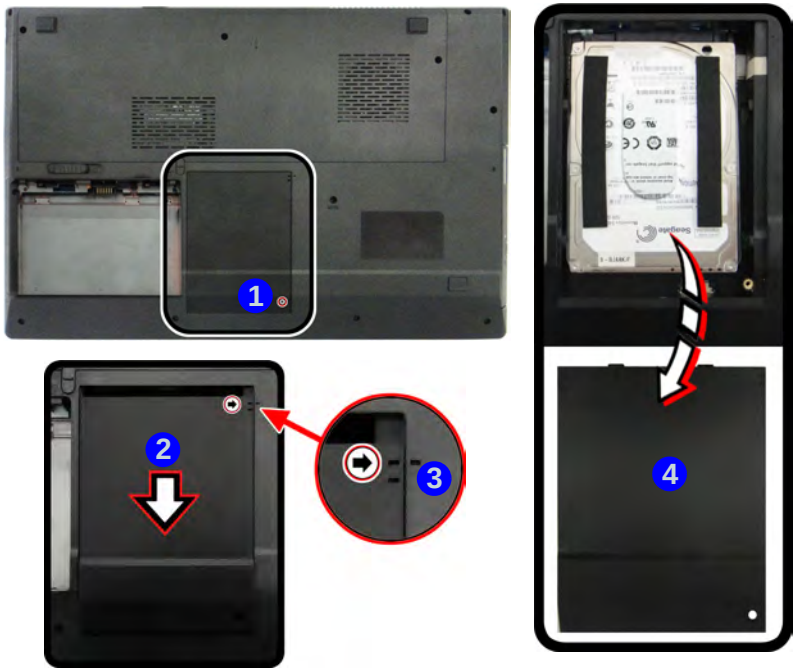


Figure 6 - 5
Primary HDD Cover Removal

HDD Insulation Plates

Note that the HDD insulation plates for the **primary** and **secondary** hard disks, though similar in outward appearance, are NOT interchangeable. The plates are clearly marked 1ST HDD & 2nd HDD.

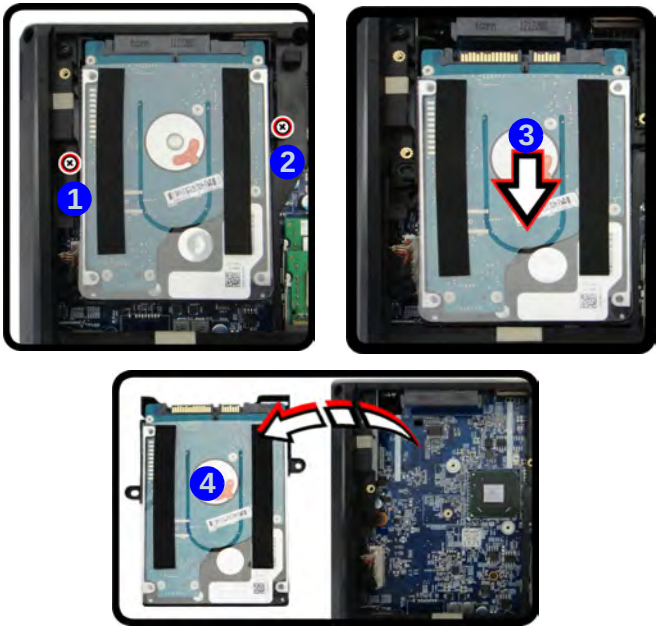
Make sure you use the appropriate insulation plate for the HDD as the sizes are slightly different

5. Slide the hard disk assembly 5 forward, and remove the assembly from the computer.
6. Remove screws 6 & 7 and the **primary HDD** insulation plate 8.
7. Reverse the process to install a new disk and do not forget to reinstall the insulation plate.
8. Replace the component bay cover (see page *6 - 7*).

Figure 6 - 6
Primary Hard Disk Insulation Plate Removal

Removing the Hard Disk from the Secondary HDD Bay

1. Turn **off** the computer, and turn it over and remove the battery and component bay cover (see pages *6 - 4* & *6 - 5*).
2. Remove screws 1 & 2 from the secondary HDD assembly.
3. Slide the HDD assembly in the direction of arrow 3.
4. Lift the HDD assembly out of the computer 4.



HDD Insulation Plates

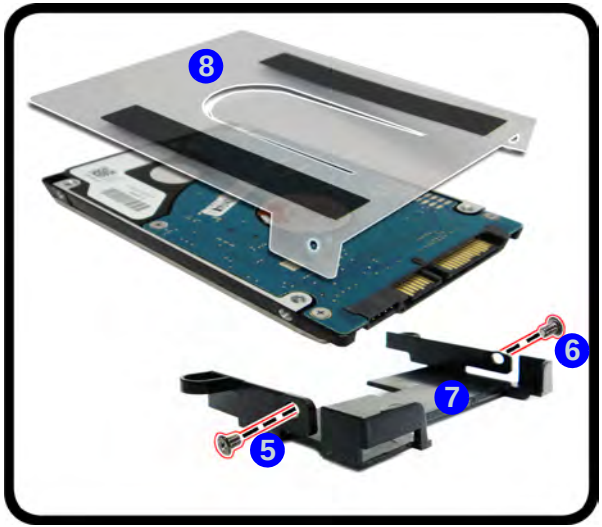
Note that the HDD insulation plates for the **primary** and **secondary** hard disks, though similar in outward appearance, are NOT interchangeable. The plates are clearly marked 1ST HDD & 2nd HDD.

Make sure you use the appropriate insulation plate for the HDD as the sizes are slightly different

Figure 6 - 7
Secondary HDD Assembly Screws & Removal

5. Remove screws 5 & 6 and separate the case bracket 7 and the insulation plate 8.

Figure 6 - 8
Secondary Hard Disk Case Bracket & Insulation Plate Removal



6. Reverse the process to install a new disk (pay careful attention to the orientation of the hard disk in the case bracket before tightening the screws).
7. Insert the new HDD into the case along with the insulation plate and replace the crews.
8. Reinsert the HDD assembly back into the case and replace the screws 1 & 2 (***Figure 6 - 7 on page 6 - 11***).
9. Replace the component bay cover (see page ***6 - 7***).

Upgrading the Optical (CD/DVD) Device

The procedure for removing the optical device will depend upon your particular computer model:

- See *"Removing the Optical Device Drive for Model A Computers" on page 6 - 14*.
- See *"Removing the Optical Device Drive for Model B Computers" on page 6 - 15*.

Removing the Optical Device Drive for Model A Computers

1. Turn **off** the computer, and turn it over and remove the battery and primary hard disk bay cover (see pages *6 - 9* & *6 - 5*).
2. Remove the screw at point 1, and use a screwdriver to carefully push out the optical device at point 2.

Figure 6 - 9
Removing the Optical Device (Model A)

3. Reverse the process to install the new device.
4. Replace the component bay cover (see page *6 - 7*).

Removing the Optical Device Drive for Model B Computers

1. Turn **off** the computer, and turn it over and remove the battery and component bay cover (see pages *6 - 4* & *6 - 5*).
2. Remove the screw at point 1, and use a screwdriver to carefully push out the optical device at point 2.

Figure 6 - 10
Removing the Optical Device (Model B)

3. Reverse the process to install the new device.
4. Replace the component bay cover (see page *6 - 7*).

Upgrading the System Memory (RAM)

The computer has **two** memory sockets for 204 pin Small Outline Dual In-line (SO-DIMM) **DDR III (DDR3)** type memory modules (see ***"Memory" on page D - 2***). The total memory size is automatically detected by the POST routine once you turn on your computer.

Note that **three SO-DIMMs are only supported by Quad-Core CPUs**; **Dual-Core CPUs support two SO-DIMMs maximum (see *"Memory" on page D - 2* for full details).**

Two primary memory sockets are located under component bay cover (the bottom case cover), and secondary memory socket is located under the keyboard (and is not user upgradable). If you are installing only two RAM modules then they should be installed in the primary memory sockets under the component bay cover.

Note that the RAM located under the keyboard is not user upgradable. Contact your distributor/supplier for more information if you wish to upgrade the memory in the secondary memory sockets.

1. Turn **off** the computer, and turn it over and remove the battery and component bay cover (see pages ***6 - 4*** & ***6 - 5***).
2. The memory sockets will be visible at point 1 on the mainboard.

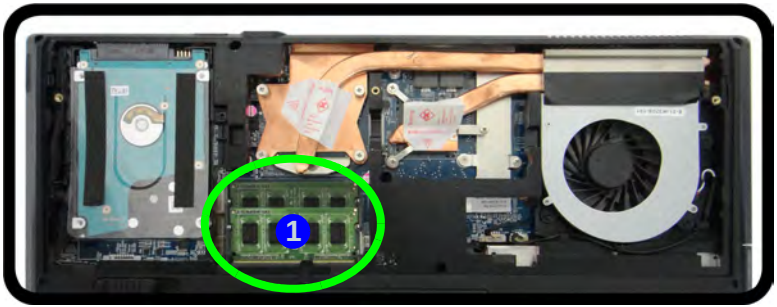


Figure 6 - 11
RAM Module Location

Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

3. Gently pull the two release latches (2 & 3) on the sides of the memory sockets) in the direction indicated below.

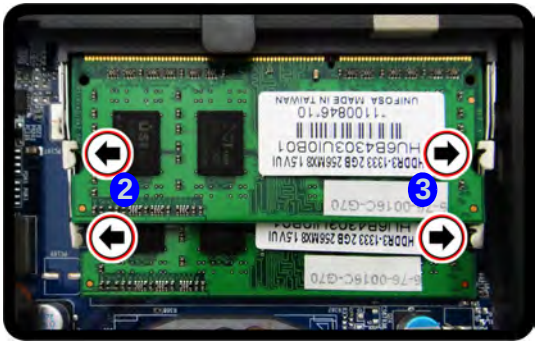


Figure 6 - 12
RAM Module Release Latches

4. The RAM module will 4 pop-up, and you can remove it.

Figure 6 - 13
RAM Module Removal

Single Memory Module Installation

If your computer has a single memory module, then insert the module into the **Channel 0 (JDIMM1)** socket. In this case this is the **lower memory socket** (the socket closest to the mainboard).

Contact Warning

Be careful not to touch the metal pins on the module's connecting edge. Even the cleanest hands have oils which can attract particles, and degrade the module's performance.

5. Pull the latches to release the second module if necessary.
6. Insert a new module holding it at about a 30° angle and fit the connectors firmly into the memory socket.
7. The module's pin alignment will allow it to only fit one way. Make sure the module is seated as far into the socket as it will go. DO NOT FORCE the module; it should fit without much pressure.
8. Press the module in and down towards the mainboard until the socket levers click into place to secure the module.
9. Replace the component bay cover (see page ***6 - 7***).

Chapter 7: Modules

Overview

This chapter contains the information on the various modules (some of which are **optional**) which may come with your computer, depending on the configuration purchased. If you are unsure please contact your service representative.

The chapter includes information on the following:

- Setting Up SATA RAID or AHCI Mode
- PC Camera Module
- Wireless LAN Module
- Fingerprint Reader Module
- Bluetooth & WLAN Combo Module
- Intel® Rapid Storage Technology
- Intel® Rapid Start Technology Driver
- Intel® Wireless Display Application
- Sound Blaster Cinema EQ
- 3G Module

RAID Hard Disks

All hard disks in a RAID should be identical (the same size and brand) in order to prevent unexpected system behavior.

SATA Mode Selection

The SATA mode selection should be made **before installing your operating system**.

DO NOT change your selected SATA mode unless you intend to re-install your operating system. Make sure you have backed up all your data before doing so.

Setting Up SATA RAID or AHCI Mode

AHCI Mode

Advanced Host Controller Interface (AHCI) is an interface specification that allows the storage driver to enable advanced serial ATA features such as Native Command Queuing (for maximum hard disk efficiency and performance). AHCI mode can be supported by one or two hard disks. Make sure you install the **Intel® Rapid Storage Technology** application if you have set up your hard disk(s) in **AHCI** mode (see *"Intel® Rapid Storage Technology" on page 7 - 57*)

RAID

To configure your RAID (Redundant Array of Independent Disks) system in Striping (RAID 0), Mirroring (RAID 1) or Recovery modes (see *Table 7 - 1, on page 7 - 3*) you will require **at least two identical** (see sidebar) hard disks. Note that you will need to install a driver from the ***Device Drivers & Utilities + User's Manual disc*** at OS installation (**see page** *7 - 4*).

Intel® Rapid Storage Technology Application

Make sure you install the **Intel® Rapid Storage Technology** application if you have set up your hard disk(s) in **RAID** mode (see *"Intel® Rapid Storage Technology" on page 7 - 57*).

RAID Level	Description
RAID 0	Identical drives reading and writing data in parallel to **increase performance**. RAID 0 implements a striped disk array and the data is broken into blocks and each block is written to a separate disk drive.
RAID 1	Identical drives in a mirrored configuration used to **protect data**. Should a drive that is part of a mirrored array fail, the mirrored drive (which contains identical data) will handle all the data. When a new replacement drive is installed, data to the new drive is rebuilt from the mirrored drive to restore fault tolerance.
Recovery	Two Identical drives copying data between a master and a recovery disk. This provides more control over how data is copied between the master and recovery drives, fast volume updates and the ability to view the data in *Windows Explorer*.

Table 7 - 1
RAID Levels

SATA Mode Selection

The SATA mode selection should be made **before installing your operating system**.

DO NOT change your selected SATA mode unless you intend to reinstall your operating system. Make sure you have backed up all your data before doing so.

RAID Hard Disks

All hard disks in a RAID should be identical (the same size and brand) in order to prevent unexpected system behavior.

Array Types

A **Mirrored Array** (**RAID 1**) provides full data protection, as data can simply be copied from a healthy disk to a replacement for any failed disk.

A **Striped Array** (**RAID 0**) is **NOT** fault-tolerant. The failure of one drive will result in the loss of all data in the array. It is de-signed to increase disk performance by spreading the I/O load across the channels and drives.

SATA RAID Setup Procedure (Windows 8)

To configure your RAID (Redundant Array of Independent Disks) system in Striping (RAID 0) or Mirroring (RAID 1) modes (see ***Table 7 - 1, on page 7 - 3***) you will require **at least two identical** (see sidebar) hard disks.

Note that the RAID setup in ***Windows 8*** differs from that outlined for ***Windows7***. You need to setup a RAID before installing your ***Windows 8*** operating system, and you will need to prepare the following in order to do so.

1. The ***Microsoft Windows 8 OS DVD***.
2. A hard disk installed in the Primary HDD bay.
3. A **second** (identical) hard disk installed in the Secondary HDD bay.
4. The ***Device Drivers & Utilities + User's Manual*** disc.
5. A USB flash drive.
6. An operable computer (to copy files from the ***Device Drivers & Utilities + User's Manual*** disc to the USB flash drive).

Before setting up the system you will need to copy a driver folder to a USB flash drive or external USB hard disk. This driver folder is included on the ***Device Drivers & Utilities + User's Manual disc*** but you will need to go to an operable computer and copy the folder to a USB Flash drive or external USB hard disk.

1. Go to the operable computer and insert a USB Flash drive or external USB hard disk.
2. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive of the operable computer.
3. Copy the **f6flpy-x86** or **f6flpy-x64** folder from the location below (D: denotes your DVD drive) on the ***Device Drivers & Utilities + User's Manual*** disc to the USB flash drive or external USB hard disk.

- **For Windows 8 32bit = D:\Options\RAID\f6flpy-x86**
- **For Windows 8 64bit = D:\Options\RAID\f6flpy-x64**

4. Start-up your notebook computer and press <F2> to enter the **BIOS**.
5. Go to the **Boot** menu, select **OS Select** and press <Enter> (see page ***5 - 14***).
6. Set **OS Select** to "**Windows 8**" and set **UEFI Boot** to "**Enabled**".
7. Press <Esc> to exit the menu and go to the **Advanced** menu.
8. Select **SATA Mode** (see page ***5 - 10***), press <Enter> and select "**RAID Mode**".
9. Press <F4> and <Yes> to "**Save Changes and Reset**".
10. After computer restarts press <F2> to enter the **BIOS** again.
11. Go to **Intel(R) Rapid Storage Technology** (in the **Advanced** menu) and press <Enter>.
12. Select **Create RAID Volume** and press <Enter>.

Figure 7 - 1
Create RAID Volume (Advanced > Intel(R) Rapid Storage Technology

13. You can now setup your RAID volume using any two installed disks.
14. Go to **Name:** and press <Enter>.
15. Type a name of your choice for your RAID volume and press <Enter>.

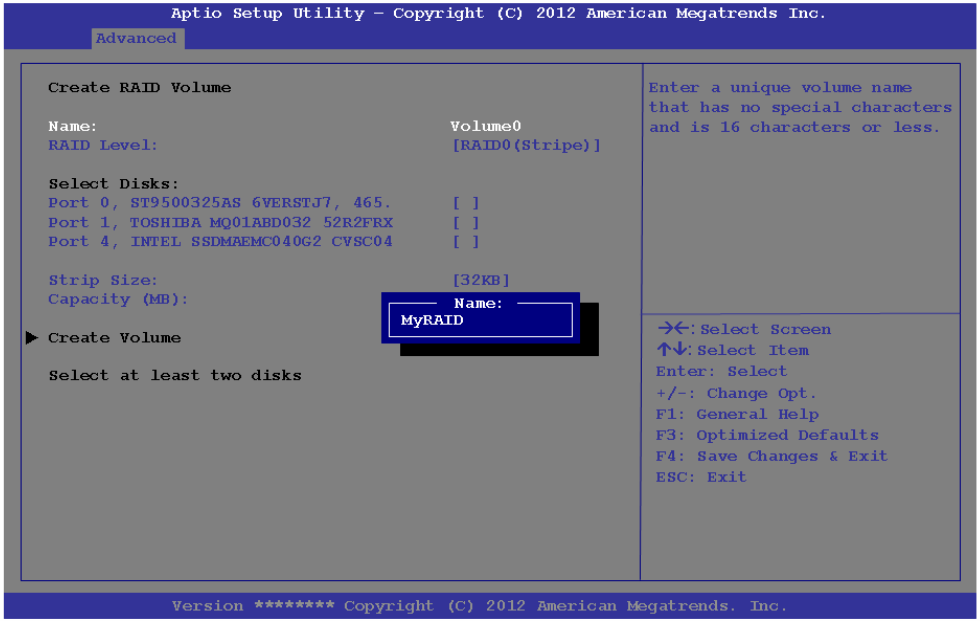

Aptio Setup Utility – Copyright (C) 2012 American Megatrends Inc.
Advanced
Create RAID Volume
Name: Volume0
RAID Level: [RAID0(Stripe)]
Select Disks:
Port 0, ST9500325AS 6VERSTJ7, 465. [ ]
Port 1, TOSHIBA MQ01ABD032 52R2FRX [ ]
Port 4, INTEL SSDMAEMC040G2 CVSC04 [ ]
Strip Size: [32KB]
Capacity (MB):
Name:
MyRAID
Create Volume
Select at least two disks
Enter a unique volume name that has no special characters and is 16 characters or less.
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save Changes & Exit
ESC: Exit
Version ******** Copyright (C) 2012 American Megatrends. Inc.

Figure 7 - 2
Name the RAID Volume (Advanced > Intel(R) Rapid Storage Technology)

16. Go to **RAID Level**: and press <Enter>.
17. Choose the RAID Level required (see *Table 7 - 1, on page 7 - 3* for details) and press <Enter>.

- **RAID0 (Stripe)**
- **RAID1 (Mirror)**
- **Recovery**

18. Go to any of the disks listed under **Select Disks:** and select a disk name and press <Enter>.
19. Move the cursor down (use the arrow keys) onto to **X** (o select the disk required and press <Enter>.

- If you have selected a **Recovery** level RAID then you need to select one disk to be **Master disk (M)** and one disk to be the **Recovery disk (R)**

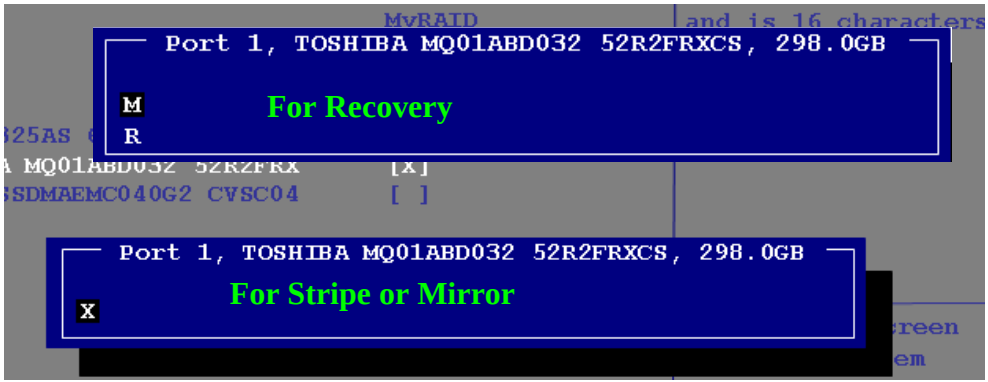


Figure 7 - 3
Select Disks (Advanced > Intel(R) Rapid Storage Technology)

20. You should select two identical disks to form your RAID volume.
21. If you have selected **RAID0** (**Stripe)** then you can adjust the "**Strip Size"** to your requirements.
22. If you have selected **Recovery** then you can adjust the **Synchronization** to "**On Request**" or "**Continuous**".
23. Go to **Create Volume** and press <Enter>.
24. The RAID volume will then be created and the RAID information will be displayed under **Intel(R) Rapid Storage Technology** (in the **Advanced** menu).

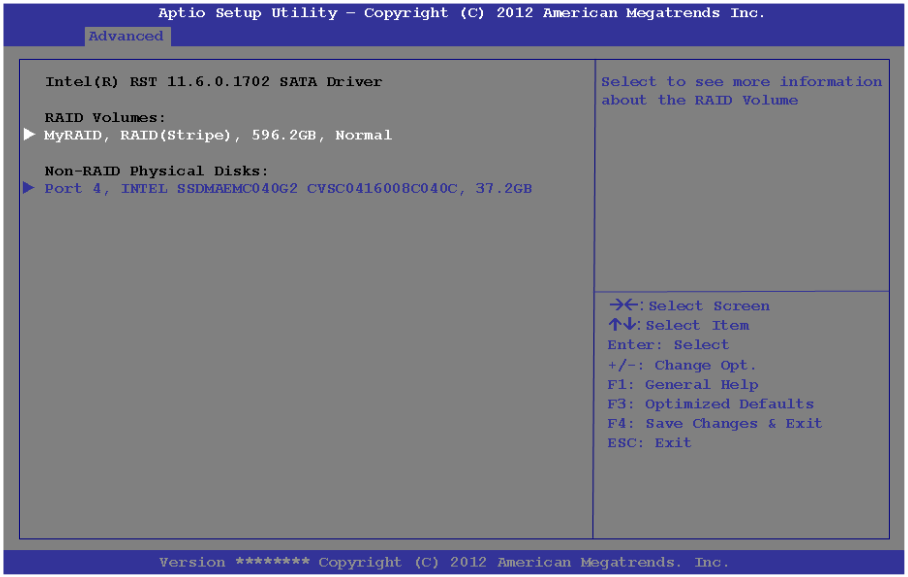

Aptio Setup Utility – Copyright (C) 2012 American Megatrends Inc.
Advanced
Intel(R) RST 11.6.0.1702 SATA Driver
RAID Volumes:
MyRAID, RAID(Stripe), 596.2GB, Normal
Non-RAID Physical Disks:
Port 4, INTEL SSDMAEMC040G2 CVSC0416008C040C, 37.2GB
Select to see more information about the RAID Volume
→←: Select Screen
↑↓: Select Item
Enter: Select
+/-: Change Opt.
F1: General Help
F3: Optimized Defaults
F4: Save Changes & Exit
ESC: Exit
Version ******** Copyright (C) 2012 American Megatrends. Inc.

Figure 7 - 4
Created RAID Information (Advanced > Intel(R) Rapid Storage Technology)

25. Press <Esc> to exit the menu.
26. Press <**F4**> and <Yes> to "**Save Changes and Reset**", however **ensure that the two conditions in the bulleted points below are met** before doing so.

- Make sure the ***Windows 8*** OS DVD is in the DVD drive. and as the computer starts up it will automatically boot from the ***Windows 8*** OS DVD (you will be prompted to press a key to boot from the DVD).
- Make sure your USB Flash drive or external USB hard disk is attached to one of the USB ports on the computer.

27. Press <F7> as the computer starts up to bring up the boot device menu.
28. Select the DVD drive containing the ***Windows 8*** OS DVD and press <Enter>.
29. Press a key at system startup to begin installing ***Windows*** from your ***Microsoft Windows 8*** disc.
30. Click **Next > Install Now** to continue installing the operating system as normal (see your ***Windows*** documentation if you need help on installing the ***Windows*** OS).
31. A prompt will appear to ask you to **Load Driver**.
32. Click **Browse** and browse to the location you copied the files to on your USB Flash drive or external USB hard disk (X: denotes your USB Flash drive or external USB hard disk):

- **X:\f6flpy-x86 (for Windows 8 32bit)**
- **X:\f6flpy-x64 (for Windows 8 64bit)**

33. Click **Next**.
34. Follow the on-screen instructions to install the ***Windows 8*** operating system.

35. Install the ***Windows*** drivers from the ***Device Drivers & Utilities + User's Manual*** disc as per ***Table 4 - 1, on page 4 - 3*** (make sure you install the Intel Rapid Storage Technology driver - see overleaf).
36. Run the **Intel® Rapid Storage Technology** application to manage your RAID volume as instructed in ***"Intel® Rapid Storage Technology for RAID Systems" on page 7 - 58***.

IRST Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **4.Install IRST Driver** > **Yes**.
4. Click **Next** > **Next**.
5. Click the tickbox to accept the license and click **Next**.
6. Click **Next** > **Next** > **Next**.
7. Click **Finish** to restart the computer.
8. See ***"Intel® Rapid Storage Technology for RAID Systems" on page 7 - 58***.

Deleting a RAID (Windows 8)

If you wish to delete an existing RAID then follow the procedure below to do so. However **backup up any necessary files and data before deleting a RAID**, as doing so will result in the loss of all data on the RAID volumes.

1. Start-up your notebook computer and press <F2> to enter the **BIOS**.
2. Go to **Intel(R) Rapid Storage Technology** (in the **Advanced** menu) and press <Enter>.
3. Go to the RAID (listed under **RAID Volumes:**) and press <Enter>.
4. Select **Delete** and press <Enter>.
5. Select "**Yes**" (note that al the data on the volumes will be lost) and press <Enter>.

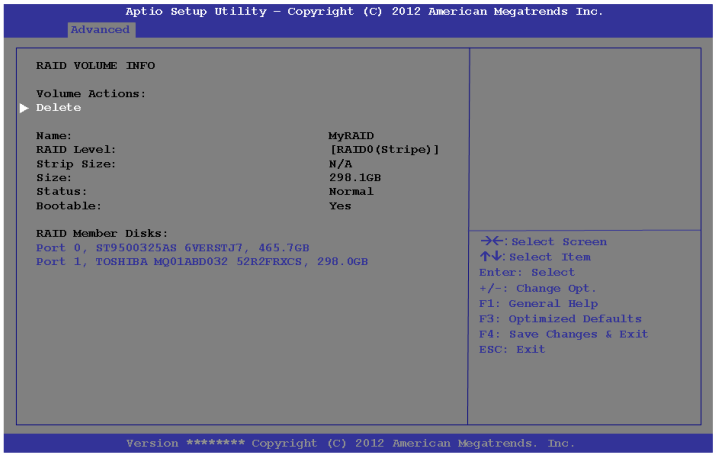


Figure 7 - 5
Delete RAID (Advanced > Intel(R) Rapid Storage Technology)

PC Camera Module

When the PC Camera application is run the LED indicator to the left of the camera will be illuminated in red (see ❷ *Figure 1 - 2 on page 1 - 7*/*Figure 1 - 3 on page 1 - 8*). Note that you need to use the **Camera** app in ***Windows 8*** to take pictures and capture video. **Use the Fn + F10 key combination** (see *"Function Keys & Visual Indicators" on page 1 - 14*) **to toggle power to the PC Camera module**.

PC Camera Audio Setup

If you want to capture video & **audio** with your camera, it is necessary to setup the audio recording options in ***Windows***.

1. Go to the **Control Panel**.
2. Click **Sound** (**Hardware and Sound**) and click **Recording** (tab).
3. Right-click hold and release **Microphone** (VIA High Definition Audio) and make sure the item is not disabled.
4. Double-click **Microphone** (or select **Properties** from the right-click menu).
5. Click **Levels** (tab), and adjust the **Microphone** and **Microphone Boost** sliders to the level required.
6. Click **OK** and close the control panels.

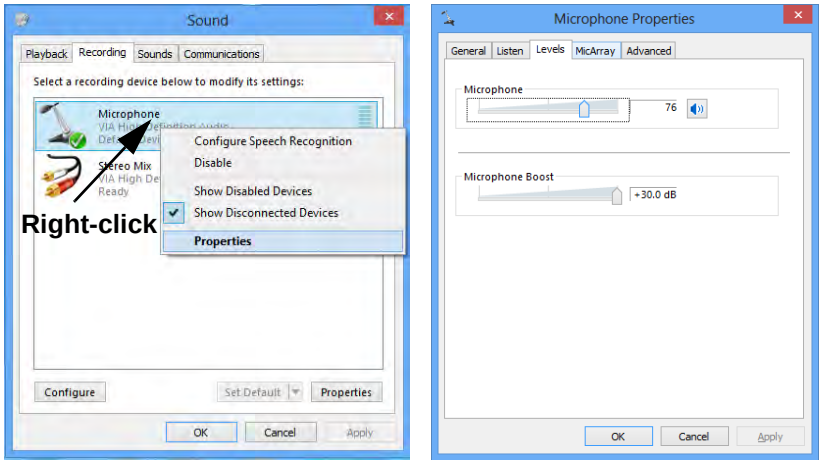
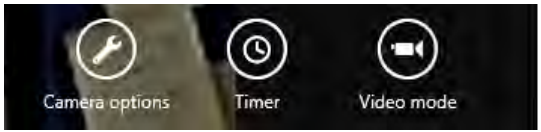


Figure 7 - 6
Audio Setup for PC Camera

Camera App

1. Make sure the camera is powered on (use the **Fn + F10** key combination to toggle power to the camera module).
2. Click the **Camera** app icon in the **Start screen to** run the **Camera** app .
3. The camera interface is a translucent app bar with three buttons.

Figure 7 - 7
Camera App Bar

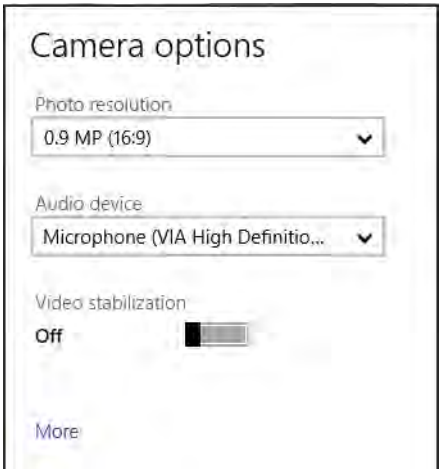


- **Camera options:**. Click this button to open a window with three main options:

Camera Options

- **Resolution** (determined by the camera spec)
- **Audio device** (select micro-phone to use)
- **Video Stabilization** (a toggle based on spec of the camera)

Figure 7 - 8
Camera Options



You can also click on **More** to adjust **Brightness**, **Contrast** and **Flicker** (if you find that the video screen in the camera program is flickering, you can try to adjust the setting here).

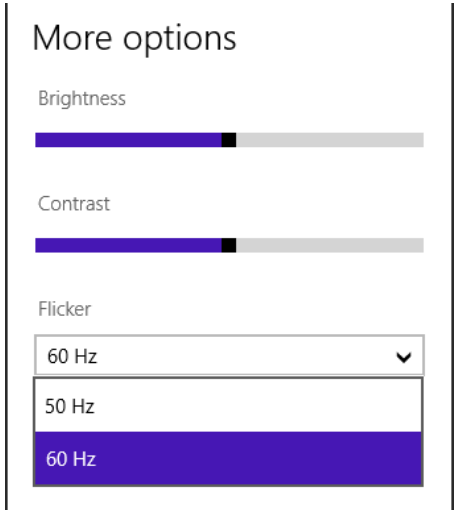


Figure 7 - 9
More Camera Options

Eliminating Screen Flicker

If you find that the video screen in the camera program is flickering, you can try to adjust the setting in **Flicker** under **More Options.**

- **Timer**: This button will start a three second countdown before the system takes a still photo or video recording starts.
- **Video Mode**: This button toggles between still photo mode (transparent button) and video recording mode (highlighted white button).

Taking Pictures/Capturing Video

1. Make sure the camera is powered on (use the **Fn + F10** key combination to toggle power to the camera module).
2. Click the **Camera** app icon in the **Start screen to** run the **Camera** app .
3. Click to select the timer if you require a countdown before capture.
4. Click to select either photo or video modes.
5. Click in the main window to take a picture or start video capture (if video capture begins a timer will appear in the bottom right corner of the screen).
6. To stop video capture click the main window again.
7. Captured photos and videos will be saved to a **Camera Roll** folder within the **Picture** folder in **Libraries**.

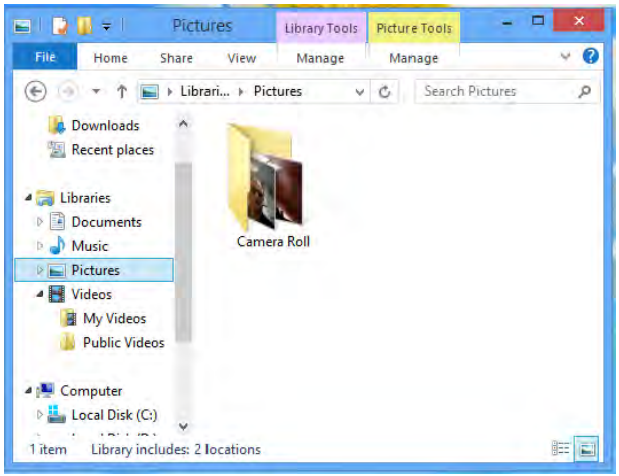


Figure 7 - 10
Libraries - Pictures

8. A scroll arrow will appear on the left side of the screen after any pictures/videos have been captured.
9. Click the arrows (on either side of the screen) to browse through the captured photos/video, and back to the Camera app.
10. Clicking on a captured photo will bring up an app bar with **Crop** and **Delete** buttons.

Figure 7 - 11
Crop & Delete Buttons (for Still Photos)

11. Use the handles to **Crop** any captured picture, and click **OK** to save the changes made.
12. Click **Delete** to delete any captured photo (note that no prompt will appear to confirm the delete).
13. Right-click any captured video to bring up app bar with **Trim** and **Delete** buttons.

Figure 7 - 12
Trim & Delete Buttons (for Video Files)

14. Use the buttons at either end of the slider to adjust the video length and click **OK** to save the changes made.

Reducing Video File Size

Note that capturing high resolution video files requires a substantial amount of disk space for each file. After recording video, check the video file size (right-click the file and select **Properties**) and the remaining free space on your hard disk (go to **My Computer**, right-click the hard disk, and select **Properties**). If necessary you can remove the recorded video file to a removable medium e.g. CD, DVD or USB Flash drive.

Note that the ***Windows 8*** system requires a minimum of **16GB (32-bit)** or **20GB (64-bit)** of free space on the **C: drive** system partition. In order to prevent system problems it is recommended that you move any large sized captured video file to a location other than the **C: drive**, or reduce video resolution (see below).

To Reduce Video Resolution Output Size:

1. Run the **Camera** app.
2. Click the **Video resolution** dropbox and select a lower resolution size in order to reduce the captured file size.
3. Note that reducing video resolution will affect the video quality.

Wireless LAN Module

If you have included an **Intel**® or **3rd Party WLAN** module in your purchase option make sure that the module is on (i.e. the system is not in **Airplane Mode**) before installing the driver.

Make sure you install the drivers in the order indicated in ***Table 4 - 1, on page 4 - 3***.

Note that you need to install both the WLAN & Bluetooth drivers for the WLAN & Bluetooth Combo modules.

Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited. Make sure the **WLAN & Bluetooth module(s) are OFF** if you are using the computer aboard aircraft by putting the system in to **Airplane Mode** (see ***Table 1 - 4, on page 1 - 11***/***Table 1 - 6, on page 1 - 14***).

3rd Party 802.11b/g/n Driver Installation

1. **Make sure the system is not in Airplane Mode**, and then insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **1.Install WLAN Driver** > **Yes**.
4. Click **Next**.
5. Click **Finish** to restart the computer.
6. The operating system is the default setting for Wireless LAN control in ***Windows*** (see page *7 - 21*).

Intel® WLAN Driver Installation

1. **Make sure the system is not in Airplane Mode**, and then insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **1.Install WLAN Driver** > **Yes**.
4. Click in the tickbox to agree to the **End User License Agreement** and click **Install**.
5. Click **Finish**.
6. The operating system is the default setting for Wireless LAN control in ***Windows*** (see page *7 - 21*).

WLAN Configuration in Windows 8

You can configure a wireless connection using one of the following options, however make sure the Wireless LAN module is turned on (and not in Airplane Mode) before configuration begins.

Charms Bar

1. Go to the **Charms Bar**.
2. Select **Settings** and then click the **WiFi icon** (it should read **Available** under the icon and **Airplane mode** should be **Off**).
3. A list of available access points will appear.

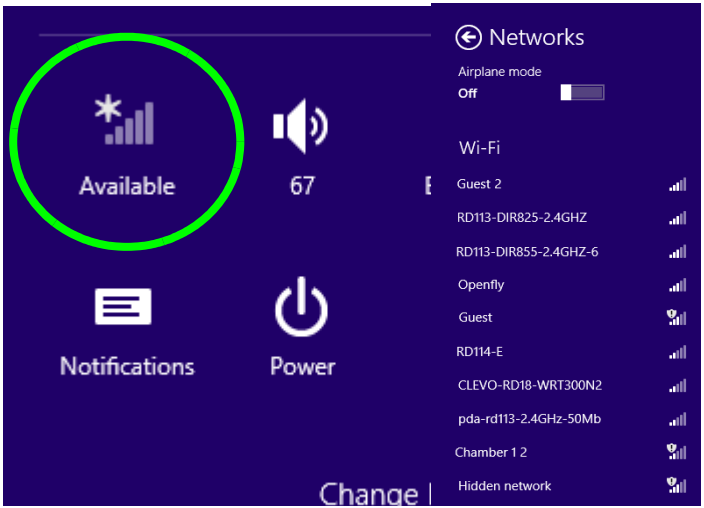


Figure 7 - 13
WiFi Settings (Charms Bar) & Networks

4. Double-click an access point to connect to it (or click it and click **Connect**).
5. Enter a network security key (password) if required, and click **Next**.
6. You can choose to share or connect to devices or not.
7. When you are connected to the network access point it will display the Connected icon Connected.
8. Select any connected network and click **Disconnect** Disconnect to disconnect from a connected access point.

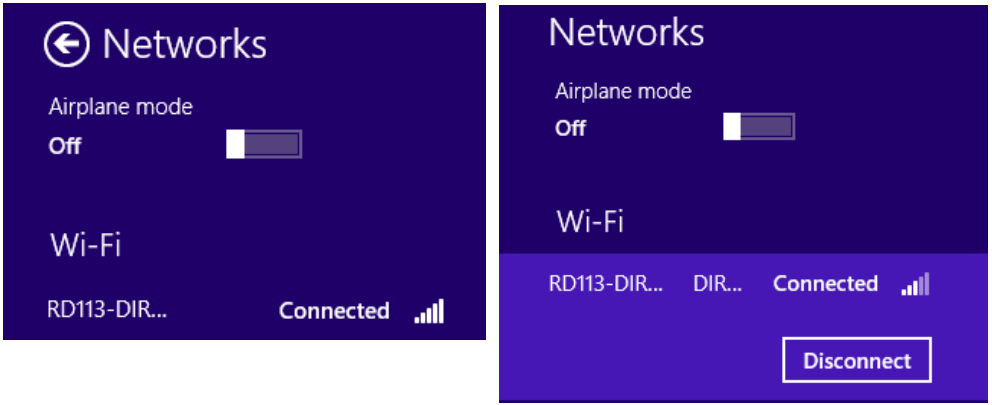


Figure 7 - 14
Networks Connected / Disconnect

9. You can click the **Airplane Mode** button to turn the mode On or Off.
10. If you click on **Change PC Settings** (at the bottom of **Settings** in the **Charms Bar**) you can turn **Wireless** or **Airplane Mode** On/Off (see over).

11. You need to either use **Airplane Mode**, or to **turn the WLAN module off** aboard aircraft.

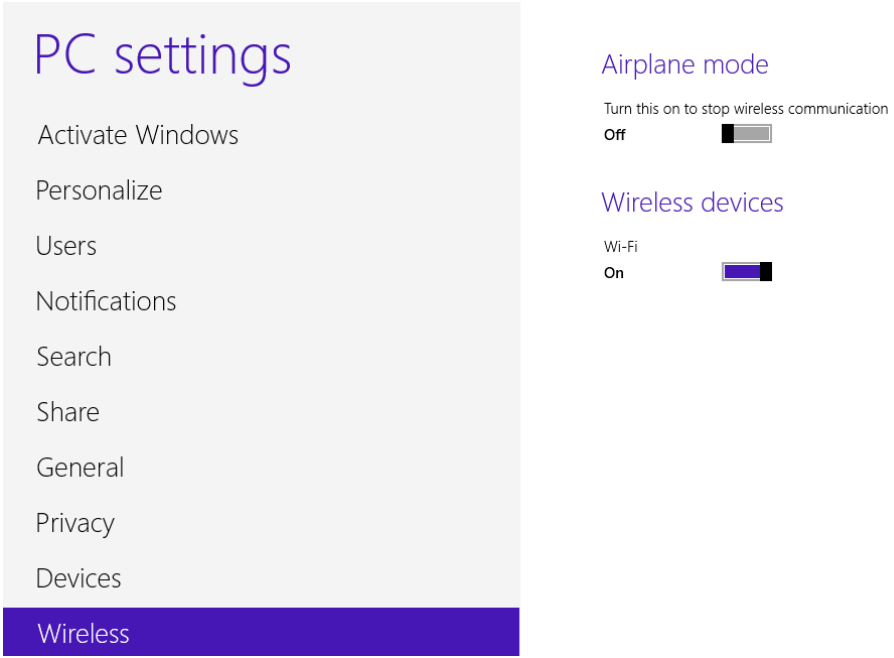


Figure 7 - 15
PC Settings (Wireless)

Desktop Mode

1. Switch to the Windows Desktop (click the app or use the Windows logo key + **D** key combination).
2. Click the wireless icon in the notification area of the taskbar.
3. A list of available access points will appear.
4. Double-click an access point to connect to it (or click it and click **Connect**).
5. Enter a network security key (password) if required, and click **Next**.
6. You can choose to share or connect to devices or not.
7. Select any connected network and click **Disconnect** to disconnect from a connected access point.

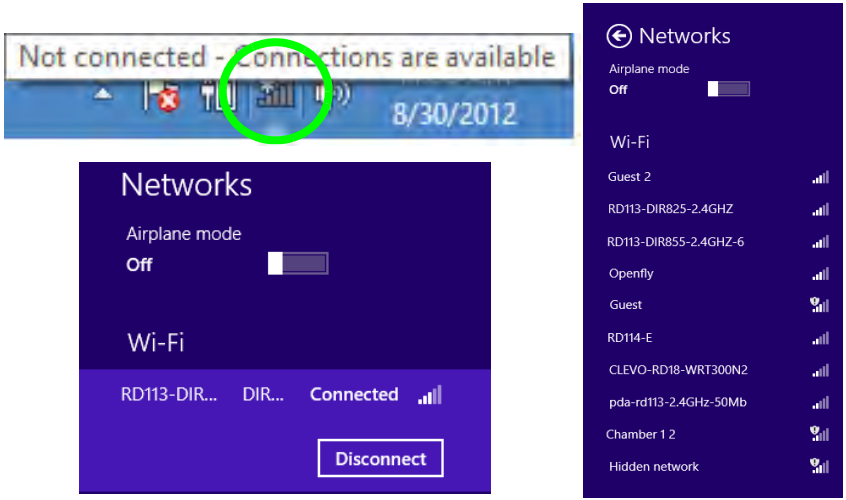


Figure 7 - 16
Windows Desktop Taskbar Notification Area WLAN Connection

Control Panel

If you are in **Category View do the following** (see over for Icon View):

1. Open the **Control Panel**.
2. Click the **Network and Internet** control panel.
3. Click **Connect to a network**.

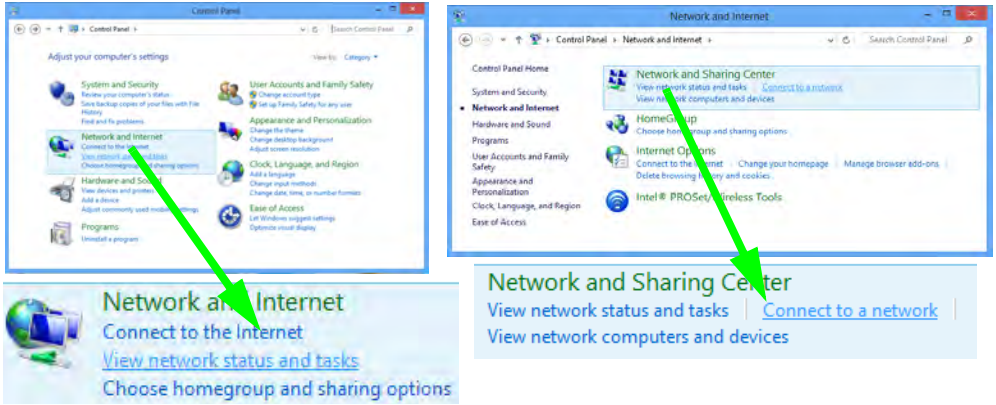

Network and Internet
Connect to the Internet
View network status and tasks
Choose homegroup and sharing options
Network and Sharing Center
View network status and tasks
Connect to a network
View network computers and devices

Figure 7 - 17
Network and Internet Control Panel

4. A list of available access points will appear.
5. Double-click an access point to connect to it (or click it and click **Connect**).
6. Enter a network security key (password) if required, and click **Next**.
7. You can choose to share or connect to devices or not.
8. Select any connected network and click **Disconnect** to disconnect from a connected access point.

If you are in **Icon View do the following:**

1. Open the **Control Panel**.
2. Click **Network and Sharing Center**.
3. Click **Change Adapter Settings**.
4. Double-click **Wi-Fi**.

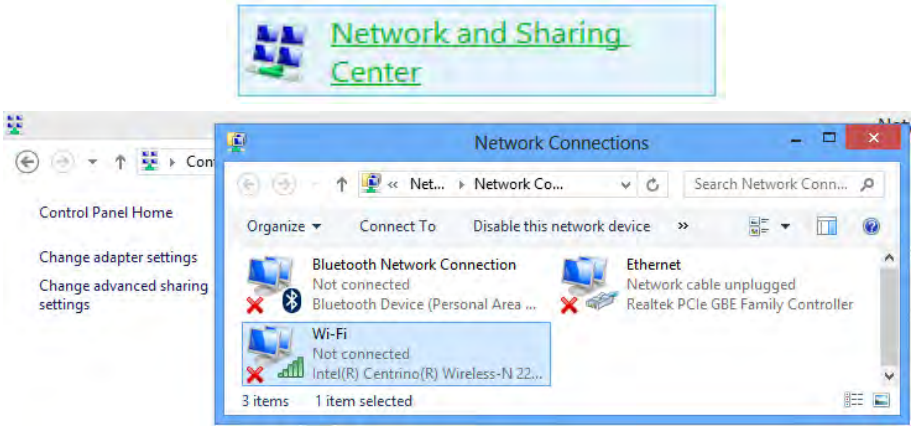


Figure 7 - 18
Network and Sharing Center Control Panel

5. A list of available access points will appear.
6. Double-click an access point to connect to it (or click it and click **Connect**).
7. Enter a network security key (password) if required, and click **Next**.
8. You can choose to share or connect to devices or not.
9. Select any connected network and click **Disconnect** to disconnect from a connected access point.

Fingerprint Reader Module

(For Model A Computers Only)

The **optional fingerprint reader application software** provides a high level of security for your computer. Make sure you have administrator's rights to your computer, and have a ***Windows*** password enabled for full security protection. A further level of security and control is provided in the BIOS (see ***"Security Menu" on page 5 - 12***).

The **fingerprint reader** and application software allow you to:

- Access or Lock your computer
- Protect sensitive files
- Access frequently used websites using your fingerprint

If you have included the fingerprint reader in your purchase option you will need to install the driver as per the instructions provided. Make sure you have administrator's rights to your computer, and have a ***Windows*** password enabled for full security protection. Before beginning the enrollment process it is recommended that you go through the fingerprint tutorial.

Password Warning

If you set passwords for any of the security modules, **NEVER** forget your password.

The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.

There are **two fingerprint applications** supplied with this model. Install the driver from the ***Device Drivers & Utilities + User's Manual*** disc and follow the appropriate instructions on the following pages.

- See overleaf for driver installation on the two applications.
- See pages ***7 - 30*** to ***7 - 39*** for information on the **AuthenTec TrueSuite** application.
- See pages ***7 - 40*** to ***7 - 50*** for information on the **BioExcess** application.

AuthenTec TrueSuite Fingerprint Reader Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers**.
3. Click **2.Install Finger Print Driver > Yes**.
4. Click **Next**.
5. Click **Finish** to restart the computer.
6. See ***"AuthenTec TrueSuite Application" on page 7 - 30*** for more information.

BioExcess Fingerprint Reader Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers**.
3. Click **2.Install Fingerprint Driver > Yes**.
4. Click **Next** (the system will take some time to install the application).
5. Click **Finish** to restart the computer.
6. See ***"BioExcess Application" on page 7 - 40*** for more information.

Fingerprint Enrollment

Note that it is strongly recommended that you **enroll more than one finger in case of injury etc.**

AuthenTec TrueSuite Application

The **AuthenTec TrueSuite** application is used in conjunction with your fingerprint reader to enroll fingerprints and manage settings etc.

User Enrollment

1. Run the **AuthenTec TrueSuite** application.
2. Click **Yes** when you have identified your **fingerprint reader sensor** (12 in *Figure 1 - 2 on page 1 - 7*).
3. Click **Yes** when you are ready to enroll your fingerprints.
4. Click on the fingerprint diagram to select any finger to enroll.
5. You will be required to enter your ***Windows*** password (you will be prompted to create a password if you have not already done so) at this point (click **OK** to confirm the password entry).
6. Swipe the finger until the progress bar reaches **100%** to enroll that finger.

Figure 7 - 19
Fingerprint Enrollment

7. You will be prompted to select another finger for enrollment (it is recommended that you enroll a number of fingers - see sidebar).
8. Click the button to continue once you have enrolled a number of fingerprints.
9. Enter the required information and click the button to register your software, or click to register later.
10. Your fingerprints will now be enrolled (you may enroll any additional fingerprints at any time).

Help

Click the **Help** icon and select a help topic from the drop-down menu. **Get more help** will provide a more comprehensive list of help topics.

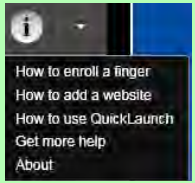


Figure 7 - 20
AuthenTec TrueSuite

Settings

Click the **Settings** button on the menu bar to access the personalization settings for **AuthenTec TrueSuite**. Here you can choose to enable/disable Website Log On, QuickLaunch, Fast User Switching and the desktop icon. You can also select the Theme and export/import identities. Click the **Save** button to save any changes made.

Figure 7 - 21
AuthenTec TrueSuite - Settings

Windows Log On

Windows log on allows you to gain access to your computer by swiping your finger across the fingerprint reader sensor. Use the **Biometric Devices** control panel (in the **Hardware & Sound** category) in ***Windows*** to turn **Biometrics on/off** when required. Access the **Biometric Devices** control panel and select **Change biometric settings** to turn the biometrics on or off, or to allow users to log on to ***Windows*** using fingerprints.

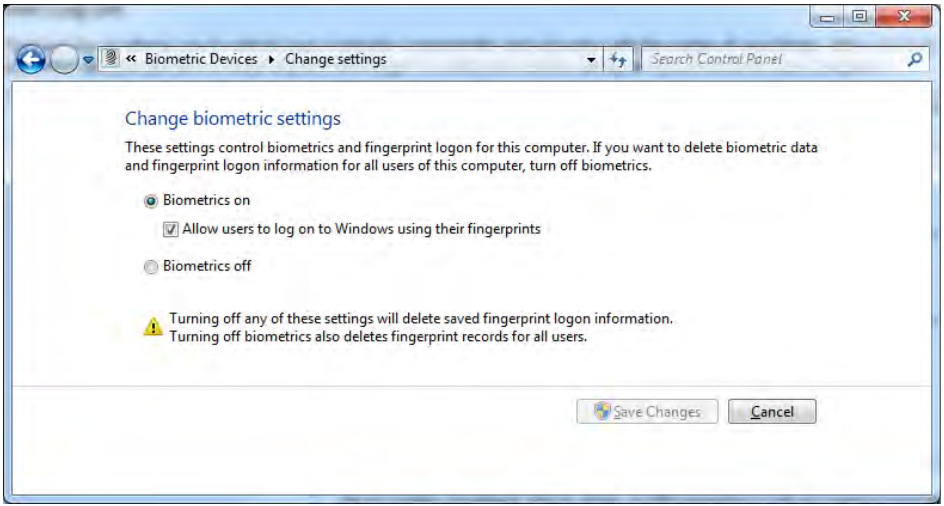

« Biometric Devices ▸ Change settings
Search Control Panel
Change biometric settings
These settings control biometrics and fingerprint logon for this computer. If you want to delete biometric data and fingerprint logon information for all users of this computer, turn off biometrics.
Biometrics on
Allow users to log on to Windows using their fingerprints
Biometrics off
Turning off any of these settings will delete saved fingerprint logon information.
Turning off biometrics also deletes fingerprint records for all users.
Save Changes
Cancel

Figure 7 - 22
Biometric Devices Control Panel (Windows Hardware & Sound)

When Biometrics is on, and ***"Allow users to log on to Windows using their fingerprints"*** is enabled, simple swipe you finger across the reader to log on to ***Windows***.

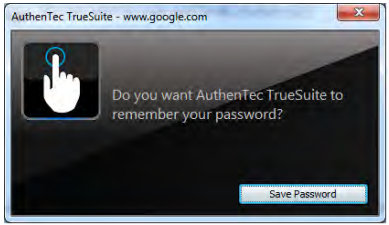
Website Log On

Use a fingerprint swipe to log on to websites to help you avoid having to remember user names and passwords across multiple websites (browsers supported are Internet Explorer, Firefox and Chrome).

Registering a Website

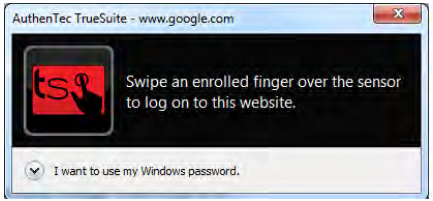
1. Use your web browser to navigate to the website required.
2. Enter your user name and password and sign in to the website.
3. An **AuthenTec TrueStudio** dialog box will pop-up.
4. Click **Save Password** to register the website.

Figure 7 - 23
Save Password



5. The website will now be registered (and your log on and password information will be bolometrically stored) and you will be prompted to swipe a finger to log on to the website in future.

Figure 7 - 24
Log On to Website


AuthenTec TrueSuite - www.google.com
Swipe an enrolled finger over the sensor to log on to this website.
I want to use my Windows password.

QuickLaunch

QuickLaunch allows you to drag and drop icons (which represent websites, folders, applications and/or computer actions) to any enrolled finger and then swipe your finger to launch the icons assigned to that finger.

1. Run the **AuthenTec TrueSuite** application.
2. Click **Select Category** View all (button) to group icons if required.
3. Drag and drop an icon to an enrolled finger.
4. To launch the website, folder, application and/or action just swipe your finger across the sensor.
5. If you have entered the log on information for the website then a single swipe will launch the website(s), load the log on page and log on to your account.

Figure 7 - 25
QuickLaunch

Adding a Website to QuickLaunch

1. Run the **AuthenTec TrueSuite** application.
2. Click the **Add Website button** on the menu bar and the dialog box will be displayed.
3. Enter the website URL, name, icon and category as required.
4. Click **Save** and an icon will be associated with the selected website.
5. To **delete** an icon right-click it and select **Delete Icon** and it will no longer be associated with the finger.

Figure 7 - 26
QuickLaunch Add Website

Dock View

Dock View displays the website icons across the bottom of the screen. Each icon wiLl have an associated web card which displays the website information, user name and password etc. This information may be edited or deleted as required.

Figure 7 - 27
Dock View

Editing a Web Card

1. Run the **AuthenTec TrueSuite** application.
2. Left-click a web card to bring up the associated information.
3. You can click the reveal/hide password button to see or hide the password.
4. Make any changes required and click Save to confirm the changes.
5. To delete a web card left-click it and click the **Delete** icon.
6. Click **Print** to print and web card and the password will be shown in plain text.
7. You can **Print all web cards** from the menu bar button if required.

Figure 7 - 28
QuickLaunch
Add Website

Exporting and Importing Your Identity

You can export your identity to backup your information, or to move it to another computer.

Exporting Your Identity

1. Run the **AuthenTec TrueSuite** application.
2. Click the **Settings** button on the menu bar.
3. Click **Export My Identity**.
4. You will be required to enter and confirm a passphrase and click **Next**.
5. Browse to a location to **Save** the file.
6. Swipe a finger to confirm the export.

Importing Your Identity

1. Run the **AuthenTec TrueSuite** application.
2. Click the **Settings** button on the menu bar.
3. Click **Import My Identity**.
4. Browse to the location where the file is saved.
5. Select the file and click **Open**.
6. Type your passphrase and click **Next**.
7. The information will then be imported.

AuthenTec KeepSafe

The **KeepSafe folder** is an encrypted area assigned on your hard drive that allows you to store files and folders to be protected by fingerprint protection. The folder will appear on your desktop (if selected in the **Personalization Settings**) and in My Computer, but will not be visible to other users of your computer.

To **lock/unlock** the **KeepSafe** folder right-click it to display the context menu and select **Unlock/Lock**. You will be required to authenticate when unlocking the folder using either a fingerprint swipe or ***Windows*** password.

To add files to **KeepSafe** folder just open the folder and drag and drop files into the folder. You may also right-click any file to bring up the context menu and select **Add to KeepSafe** (you can select whether or not to keep or delete the original file).

BioExcess Application

The **BioExcess** application is used in conjunction with your fingerprint reader to enroll fingerprints and manage settings etc.

User Enrollment

1. Run the **BioExcess** application from the **Start** screen.
2. Identify your **fingerprint sensor** (11 Fingerprint Reader Module in ***Figure 1 - 2 on page 1 - 6***).
3. Click **Next** when the **Initial Wizard** appears.
4. Swipe a finger to practice enrollment (click **Next** to skip this step).

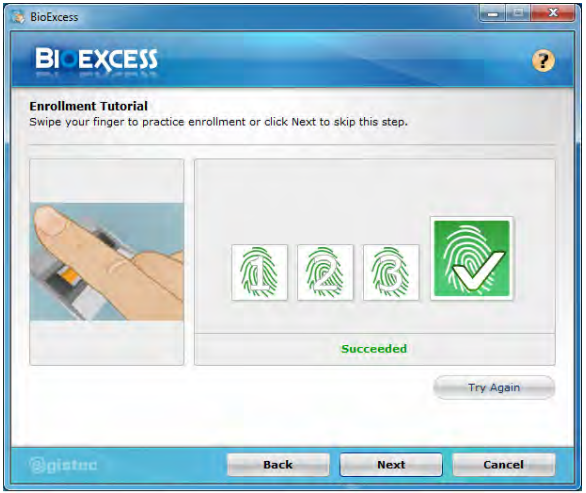


Figure 7 - 29
Enrollment Tutorial

5. Enter your ***Windows*** log on **password**, and then click **Next**.
6. Click on the fingerprint diagram to select any finger to enroll.
7. Swipe the finger until the finger is enrolled and then repeat for other fingers.
8. Click **Next** to continue once you have enrolled a number of fingerprints.

9. Click **Finish** when the **Initialization Successful** message appears (if you have selected **Launch Control Center** then it will be run on exiting the wizard).

Fingerprint Enrollment

Note that it is strongly recommended that you enroll more than one finger in case of injury etc. See page ***8 - 11*** for further information on scanning fingers

Figure 7 - 30
Fingerprint Enrollment

BioExcess Control Center

Run **BioExcess** application and swipe a registered finger to run the **Control Center** (or swipe a finger across the fingerprint sensor and select Control Center from the **BioExcess Menu**).

Figure 7 - 31
BioExcess Menu & Authentication

Use the **Control Center** to adjust all the BioExcess application settings. Click on any of the menu headings to access the sub-menu to adjust functions or settings including **Fingerprint Management, Data Protection**, **Online Accounts Management**, **General settings** and **Information**.

Help

Click the **Help** icon and select a help topic from the drop-down menu. Select a topic from the **Contents** menu or **Search** for help on a specific area.

Figure 7 - 32
Control Center

Fingerprint Management

Fingerprint Enrollment: You can add or delete enrolled fingers by clicking in the box above any of the fingers.

Application Launcher: Use any of your fingers to launch any chosen **application**, **website**, **online account** or use **Launch Express** to launch functions such as Shut Down, Windows Lock etc. Click **OK** to save any changes made to these settings.

- Click on any of the boxes above an enrolled finger and select the item from the drop-down menu.

Figure 7 - 33
Application Launcher

- Simply drag and drop an **executable file** onto any enrolled fingers to launch an application, or click and select **Launch Application** and then browse to the executable file.
- Select **Launch Web Site** and then input the URL to use a finger to go to any website.
- **Auto Login** will prompt you to choose an account to select to login to when a finger is swiped.
- **Launch Express** will allow you select one of a number of functions (e.g. shutting down the computer) when the appropriate finger is swiped.

Figure 7 - 34
Launch Express

Data Protection

File Encryption/Decryption: Click **Add** or drag and drop any file for encryption/decryption. Click **Encrypt** and you will be asked for a backup pass ow rd for the file. You can right-click any file and select **Decrypt/Encrypt File** from the BioExcess item in the menu. See the **Help** file for further information.

Secure Drive Access: You can access your secure drive here. The secure drive is a personal virtual drive that may only be open and closed by means of the authenticated fingerprint or password. Use the **BioExcess Menu** (swipe a finger across the sensor) or the click the icon in the notification area of the taskbar to open and close (make sure you have saved any file data before closing) the secure drive. See page *7 - 48* for information on how to set the drive's **location** and **capacity**.

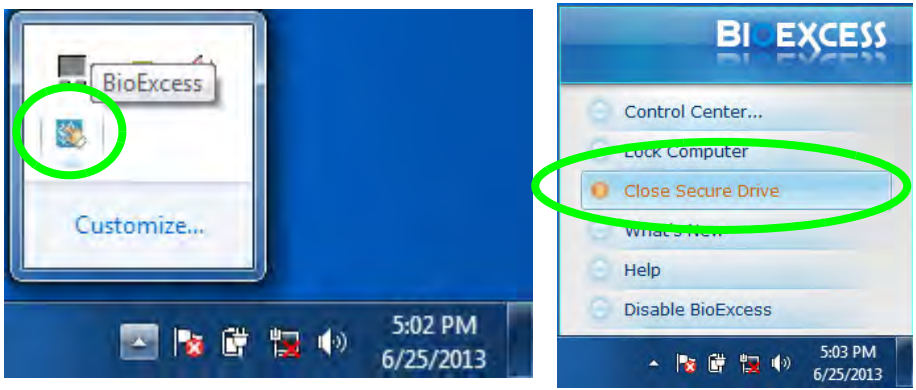


Figure 7 - 35
Taskbar Notification Area Menu (Open/Close Secure Drive)

Online Accounts Management

You can store user IDs and passwords for websites and/or applications and the software will then automatically fill in your log on and password information for you when you swipe your finger. When you visit a registered website or program you will see a BioExcess icon in the top left of the screen prompting you to swipe a finger to log on. See **Help** for more information on registering and managing online accounts.

Security Check will assess the password strength for any of your online accounts by indicating if it is weak, medium or strong. If your password is assessed as weak then it is suggested you change it.

Figure 7 - 36
Control Center Online Accounts Management

General Settings

User Settings: Fast User Switch enables multiple users to switch to their own ***Windows*** environment with the swipe of a finger. Use **Pre-Boot Authentication** to prevent the ***Windows*** OS from loading until the password has been confirmed.

Password Settings: You can change your backup password and ***Windows*** password settings from this menu.

Secure Drive Settings: You can **open/close**, **change drive location** and **change the capacity** of the secure drive from this menu.

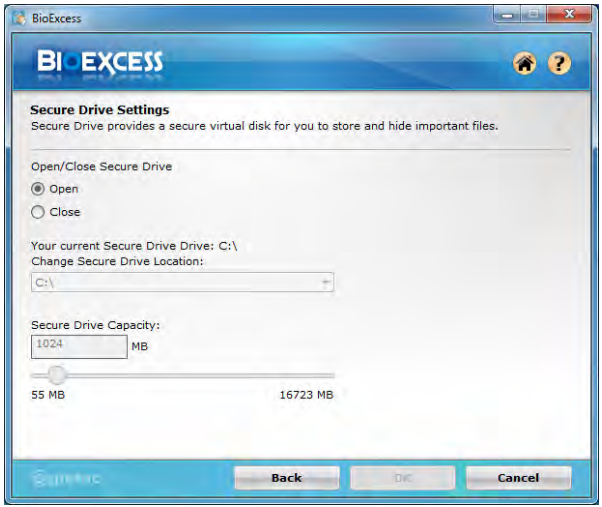


Figure 7 - 37
Control Center Secure Drive Settings

Data Backup Settings: Use this menu to set the **location** of the back up data (click **Browse** and set location), manage the backup password and to select which items are backed up (enrolled fingerprints and online accounts data).

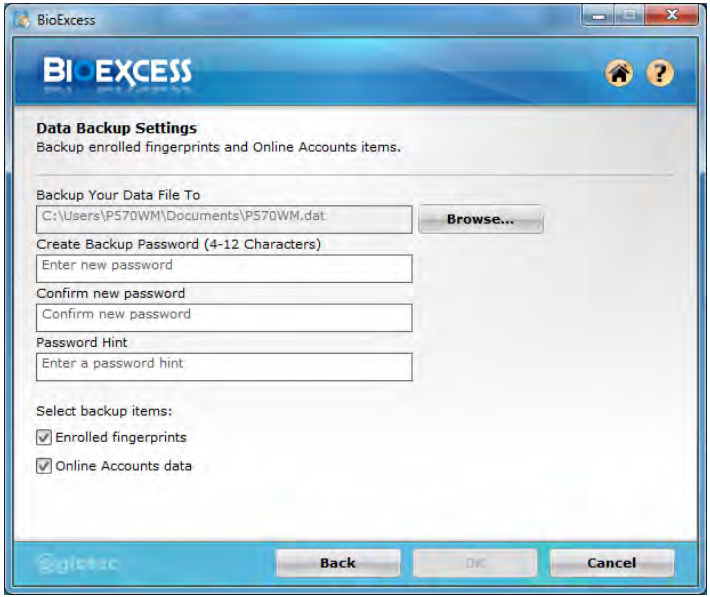


Figure 7 - 38
Control Center Data Backup Settings

Data Restore Settings: If you need to restore previously backed up data then do so from this menu. Click **Browse** and go the location of the original backup, and input the password.

Information

These menu items provide online information on your software version, support and any new features. You can also access the animated **Tutorial** on **Online Accounts**, **Swipe One** and **Secure Drive**.

Figure 7 - 39
Control Center Information

Bluetooth & WLAN Combo Module

If your purchase option includes the **Combination Wireless LAN & Bluetooth module** (either **Intel®** or **3rd Party**) then install the driver as instructed overleaf.

Make sure that the module is on (i.e. the system is not in **Airplane Mode**) before installing the driver.

Bluetooth Data Transfer

Note that the transfer of data between the computer and a Bluetooth enabled device is supported in one direction only (simultaneous data transfer is not supported). Therefore if you are copying a file from your computer to a Bluetooth enabled device, you will not be able to copy a file from the Bluetooth enabled device to your computer until the file transfer process from the computer has been completed.

High Speed Bluetooth Data Transfer

The **Combination Wireless LAN & Bluetooth module** supports high speed data transfer. However to achieve such transfer speeds, **both devices must support high speed data transfer**.

To obtain high speed data transfer make sure that both the WLAN and Bluetooth modules are powered on.

Check your Bluetooth compatible device's documentation to confirm it supports high speed data transfer.

3rd Party Bluetooth (V4.0) Combo Driver Installation

1. **Make sure the system is not in Airplane Mode**, and then insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **3.Install Combo BT Driver** > **Yes**.
4. Click **Next**.
5. Click **Finish** to restart the computer.
6. See ***"Bluetooth Configuration in Windows 8" on page 7 - 53*** for configuration instructions.

Intel Bluetooth Combo Driver Installation

1. **Make sure the system is not in Airplane Mode**, and then insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **3.Install Combo BT Driver** > **Yes**.
4. Click **Next** > **Next**.
5. Click in the tickbox to accept the license and click **Next**.
6. Click **Next** > **Finish**.
7. See ***"Bluetooth Configuration in Windows 8" on page 7 - 53*** for configuration instructions.

Bluetooth Configuration in Windows 8

You can configure a Bluetooth connection as below, however make sure the Bluetooth module is on (i.e. not in Airplane Mode) before configuration begins.

Desktop Mode

1. Switch to the Windows Desktop (click the App or use the Windows logo key + **D** key combination).
2. Click the notification area of the taskbar and double-click the Bluetooth icon (or click and select **Show Bluetooth Devices**).
3. The **Devices** item in **PC Settings** will appear.

OR

Charms Bar

1. Go to the **Charms Bar**.
2. Select **Settings** and then click **Change PC Settings**.
3. The **Devices** item in **PC Settings** will appear.

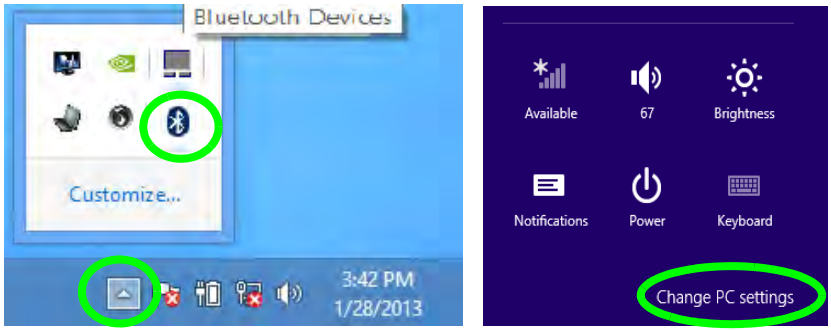


Figure 7 - 40
Bluetooth Taskbar Icon & Change PC Settings (Charms Bar -Settings)

4. Click **Add a Device**.
5. Double-click the device you want to pair with the computer.

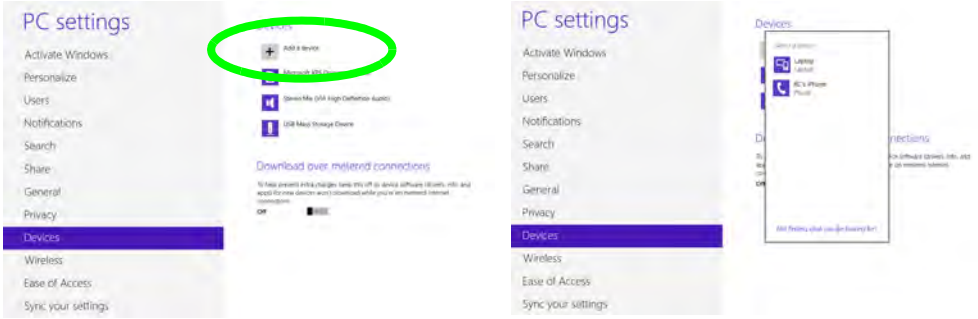


Figure 7 - 41
PC Settings (Devices) Add A Device

6. On first connection the computer will provide you with a pairing code to be entered onto the device.

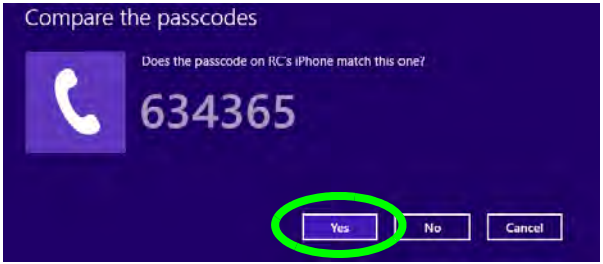


Figure 7 - 42
Enter the Passcode

7. Enter the code into your Bluetooth enabled device and click **Yes** on the computer to complete the pairing.

8. You need to either use **Airplane Mode**, or to **turn the Bluetooth module off** aboard aircraft.

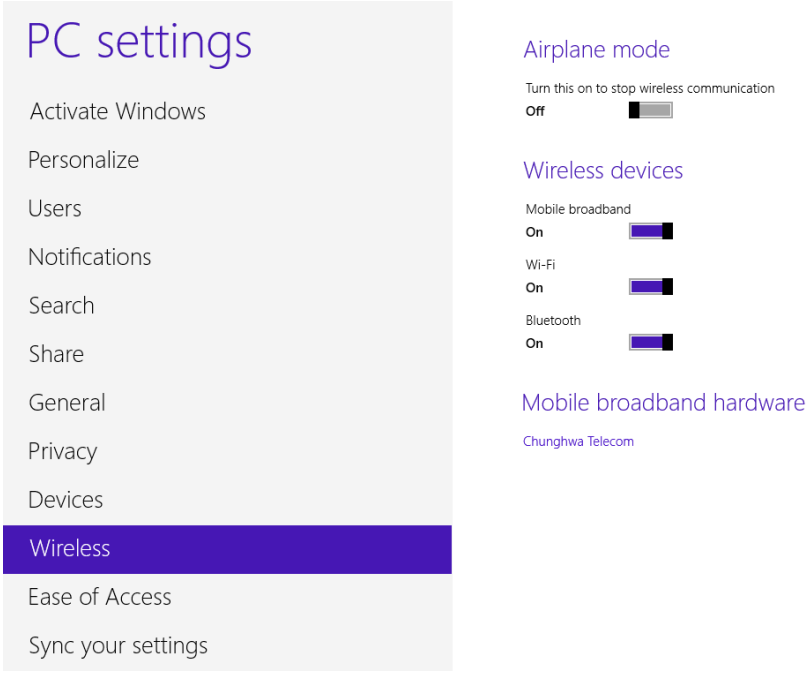


Figure 7 - 43
PC Settings (Wireless)

To Make your Computer Discoverable to Bluetooth Devices

1. Switch to the Windows Desktop (click the app or use the Windows logo key + **D** key combination).
2. Click the notification area of the taskbar, click the Bluetooth icon and click **Open Settings**.
3. Click **Options**, and make sure that ***Allow Bluetooth devices to find this computer*** check box (**Discovery**) has a tick inside it.
4. Make sure that the ***Alert me when a new Bluetooth device wants to connect*** check box (**Connections**) has a tick inside it, if you want to be notified when a Bluetooth device wants to connect.

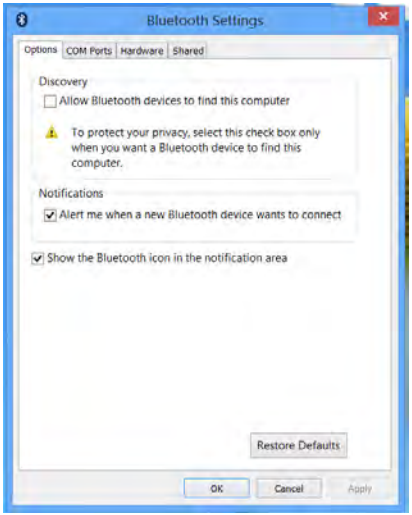


Figure 7 - 44
Bluetooth Settings

Intel® Rapid Storage Technology

The **Intel Rapid Storage Technology application** provides high-performance SATA and SATA RAID capabilities. Install the **Intel Rapid Storage Technology application** (after installing all necessary drivers in the correct order) to support your **RAID** system or SATA drive if set up in **AHCI mode** in the BIOS (see ***"SATA Mode (Advanced Menu)" on page 5 - 10***).

IRST Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **4.Install IRST Driver > Yes**.
4. Click **Next > Next**.
5. Click the tickbox to accept the license and click **Next**.
6. Click **Next > Next > Next**.
7. Click **Finish** to restart the computer.

See the following pages for more information if you have set your hard disks up in a RAID configuration.

Intel® Rapid Storage Technology for RAID Systems

Intel® Rapid Storage Technology application displays status information on your RAID configuration. Run the **Intel® Rapid Storage Technology** application from the item in the **Start** menu.

When the **Intel® Rapid Storage Technology** application is launched the system will open the **Status** window. Here you can view the general health of the storage system. Various volume creation and management options are available depending on the system's status.

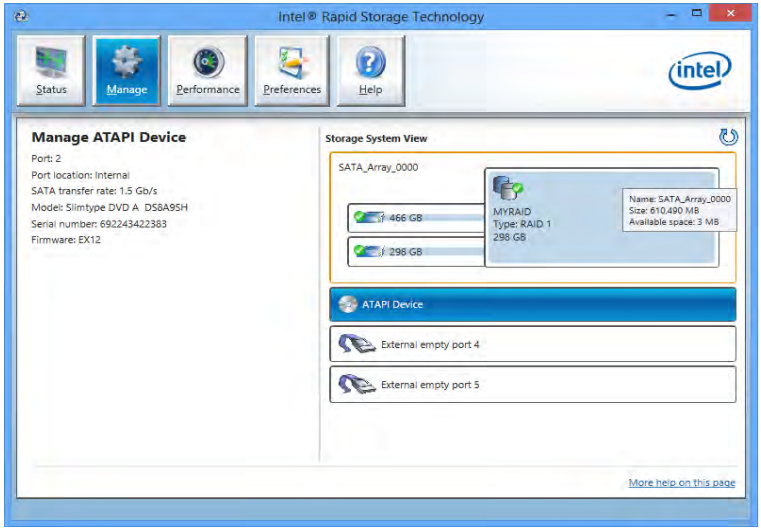
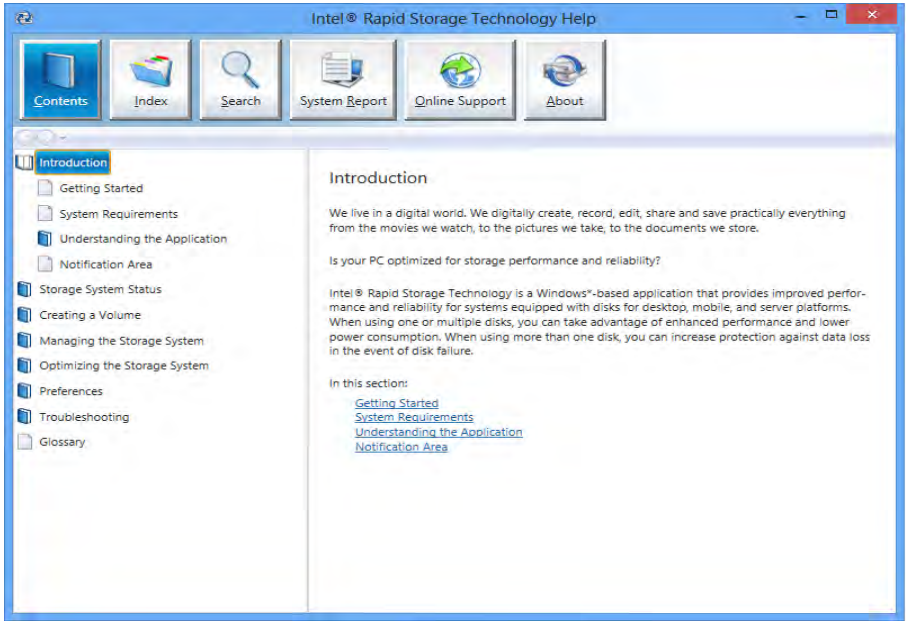


Figure 7 - 45
Intel® Rapid Storage Technology Status

Intel® Rapid Storage Technology Help

If a hard drive member of a RAID volume is reported as "**Degraded**" or "**Failed**" it may be possible to recover the volume. If the volume cannot be restored then you will need to recreate the RAID volume and restore the data from a back up. Click the **Help** menu (or press **F1**) for instructions on how to recover or recreate RAID Volumes.


Intel® Rapid Storage Technology Help
Contents
Index
Search
System Report
Online Support
About
Introduction
Getting Started
System Requirements
Understanding the Application
Notification Area
Storage System Status
Creating a Volume
Managing the Storage System
Optimizing the Storage System
Preferences
Troubleshooting
Glossary
Introduction
We live in a digital world. We digitally create, record, edit, share and save practically everything from the movies we watch, to the pictures we take, to the documents we store.
Is your PC optimized for storage performance and reliability?
Intel® Rapid Storage Technology is a Windows®-based application that provides improved performance and reliability for systems equipped with disks for desktop, mobile, and server platforms. When using one or multiple disks, you can take advantage of enhanced performance and lower power consumption. When using more than one disk, you can increase protection against data loss in the event of disk failure.
In this section:
Getting Started
System Requirements
Understanding the Application
Notification Area

Help

Click the **Help** (or press **F1**) menu button at the top of the **Intel® Rapid Storage Technology** application.

Click **Contents** to view the general list of subjects covered, click **Index** or **Search** for a more specific help topics on a particular item.

Click **More help on this page** at the bottom of any page for page specific help.

Figure 7 - 46
Intel® Rapid Storage Technology Help

RAID Volume Data Verification and Repair

The RAID volume data verification process identifies any inconsistencies or bad data on a RAID 0 or RAID 1 volume. The table outlines what occurs for each RAID level:

Table 7 - 2
RAID Level Verification & Repair Status

RAID Level	Verify	Verify & Repair
RAID 0	Bad blocks are identified.	N/A
RAID 1	Bad blocks are identified. Data on the mirrored drive is compared to data on the source drive.	Bad blocks are reassigned. If the data on the mirrored drive does not match the data on the source drive, the data on the mirrored drive is overwritten by the data on the source.

Replacing and Reverting Recovery and Master Volumes

If a master or recovery drive fails you will need to add a new identical drive and re-build the recovery volume to the drive. You can also revert the master drive to the state of the previous volume update. For details on how to do this see the help file *"Intel® Rapid Storage Technology Help" on page 7 - 59*.

See over for details on how to verify and repair RAID volume data. Verification will identify and repair data inconsistencies on the volume.

Verifying and Repairing RAID Volume Data

1. Before verifying the volume data you will need to initialize the volume.
2. Run the **Intel® Rapid Storage Technology** application.
3. Click to **select the RAID** in the pane on the right side of the window.
4. Click **Manage** and click **Advanced**.
5. Click **Initialize** and click **Yes** (button) to begin the process.
6. The completion percentage will be listed under **Status**.

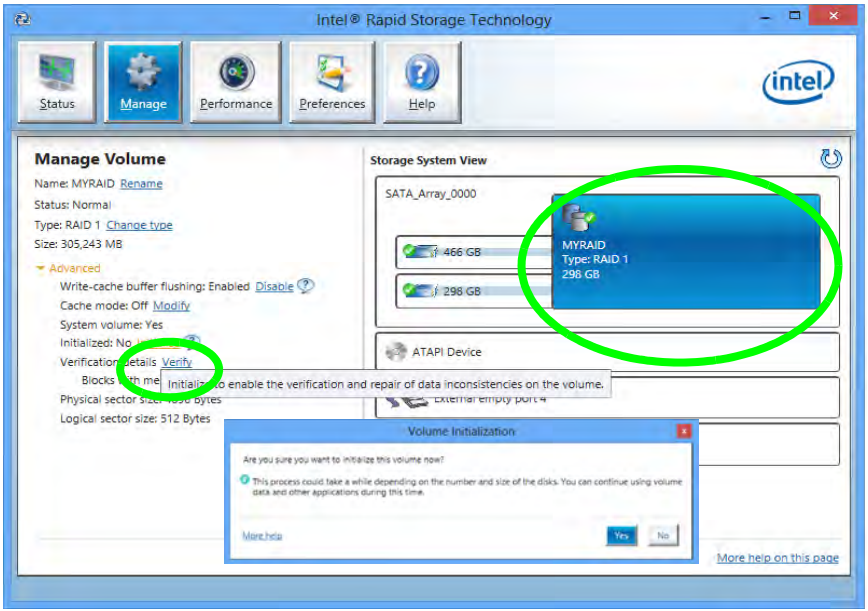


Figure 7 - 47
Intel® Rapid Storage Technology Initialize

7. Click **Advanced** and click **Verify**, then click **Verify** (button) to begin the process.
8. The completion percentage will be listed under **Status** (verifying and repairing).

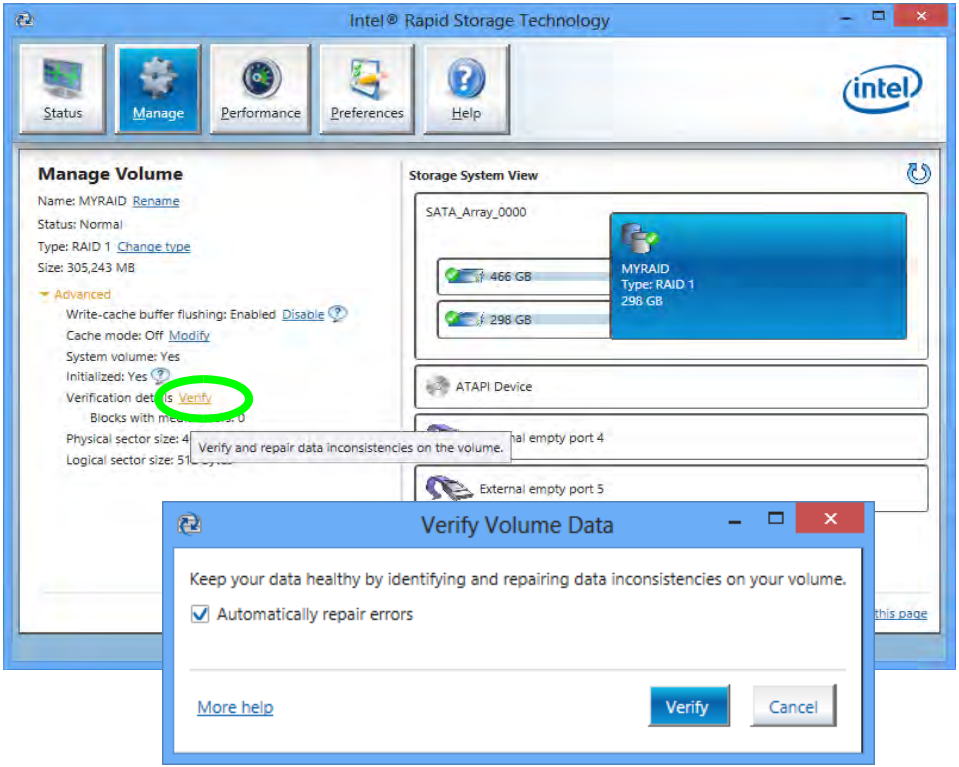


Figure 7 - 48
Intel® Rapid Storage Technology Verify

Intel® Rapid Start Technology Driver

Intel(R) Rapid Start Technology can resume power from Hibernation within 5 to 6 seconds and can remember your computer's previous state with zero power.

System Requirements to support Intel® Rapid Start Technology:

- Rapid Start Technology should be enabled in the BIOS (see *"Intel(R) Rapid Start Technology (Advanced Menu)" on page 5 - 9*).
- Intel Rapid Storage Technology software installed.
- A Solid State Drive (SSD) with a minimum capacity of 18.6GB.

See overleaf for instructions on enabling **Intel® Rapid Start Technology**.

Intel® Rapid Start Technology Configuration

1. Enable/disable **Intel(R) Rapid Start Technology** from the BIOS (see ***"Intel(R) Rapid Start Technology (Advanced Menu)" on page 5 - 9***).
2. Go the ***Windows*** control panel and double-click **Administrative Tools** (**System and Security**)**> Computer Management > Storage > Disk Management**
3. Right-click the SSD and select **Shrink Volume** from the menu.

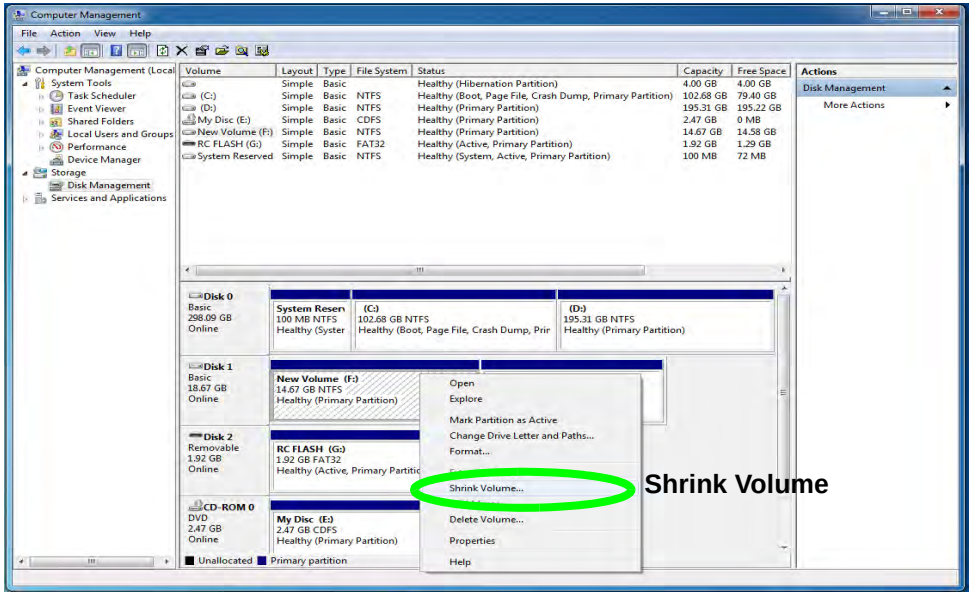


Figure 7 - 49
Computer Management (Shrink SSD Volume)

4. Enter the figure, **which should be equal to amount of system memory (RAM) in your computer,** in "**Enter the amount of space to shrink in MB**".

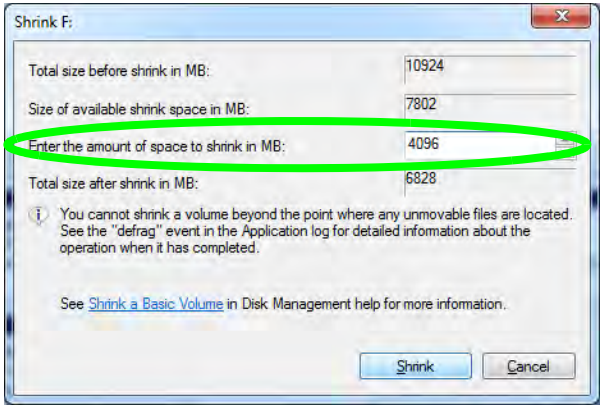

Shrink F:
Total size before shrink in MB:
10924
Size of available shrink space in MB:
7802
Enter the amount of space to shrink in MB:
4096
Total size after shrink in MB:
6828
You cannot shrink a volume beyond the point where any unmovable files are located. See the "defrag" event in the Application log for detailed information about the operation when it has completed.
See Shrink a Basic Volume in Disk Management help for more information.
Shrink
Cancel

Figure 7 - 50
Shrink Volume Size

5. Click **Shrink** (any unallocated file space may be formatted for storage use).

Memory Size (Amount of Space to Shrink)

The figure entered in the "**Enter the amount of space to shrink in MB**" field above should be equal to the amount of system memory in your computer. In the example above the system memory is 4GB (**1024MB * 4 = 4096GB**). If you are unsure of your total system memory (RAM) then go to **System** control panel (System and Security) and check **Installed memory (RAM)**. The memory size will be displayed in GB so convert by multiplying the GB figure by 1024 to get the total in MB (e.g. 8GB = 8192MB).

6. Run the Desktop app and right-click the lower left hot corner (or use the ***Windows Logo Key*** + *X* key combination) and select **Command Prompt (Admin)**.

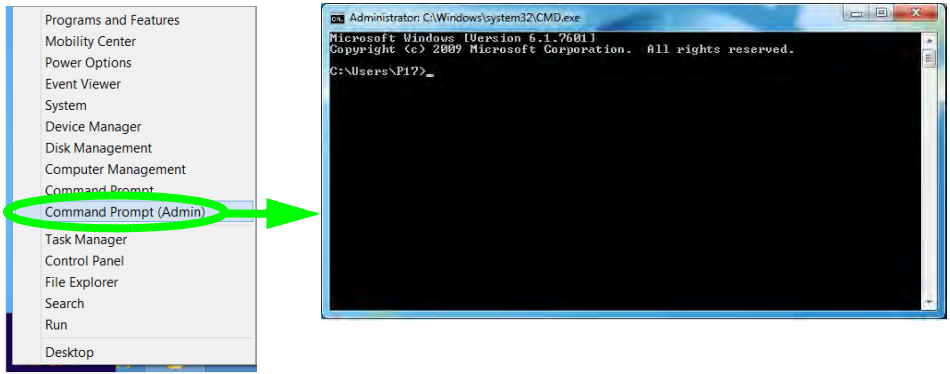


Figure 7 - 51
Search for CMD Prompt

7. Type "**DISKPART**".
8. At the DISKPART command type "**list disk**".

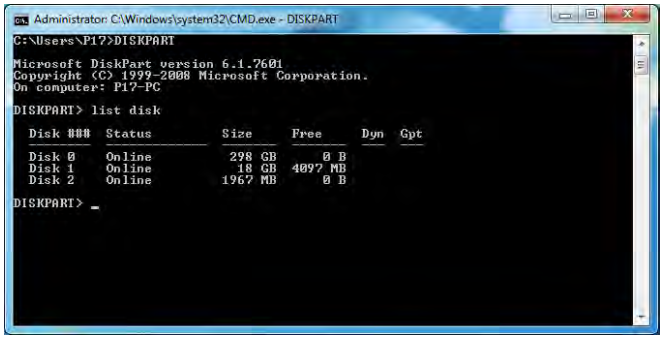

Administrator: C:\Windows\system32\CMD.exe - DISKPART
C:\Users\P17>DISKPART
Microsoft DiskPart version 6.1.7601
Copyright (C) 1999-2008 Microsoft Corporation.
On computer: P17-PC
DISKPART> list disk
Disk ### Status Size Free Dyn Gpt
Disk 0 Online 298 GB 0 B
Disk 1 Online 18 GB 4097 MB
Disk 2 Online 1967 MB 0 B
DISKPART>

Figure 7 - 52
Diskpart - List Disk

9. Type “**select disk #**” (**#** is disk number where you want to create the store partition, so refer to the results obtained from "**list disk**" for exact disk number).
10. The message “**Disk # is now the selected disk.**” will appear.

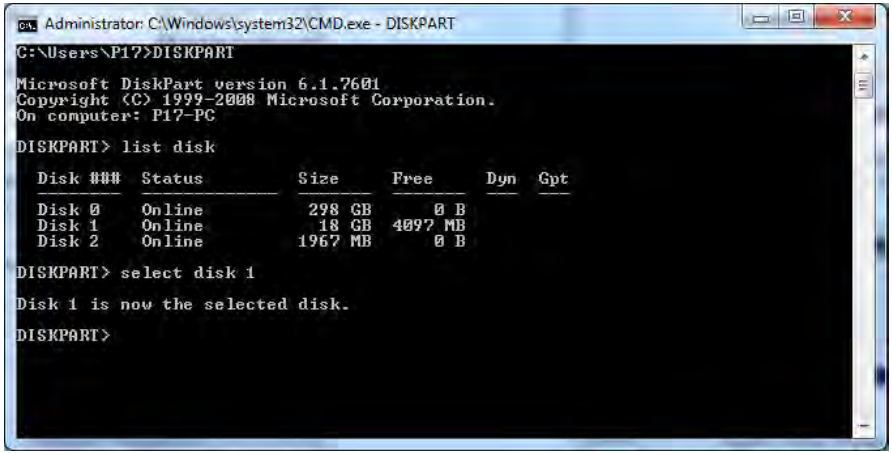

Administrator: C:\Windows\system32\CMD.exe - DISKPART
C:\Users\P17>DISKPART
Microsoft DiskPart version 6.1.7601
Copyright (C) 1999-2008 Microsoft Corporation.
On computer: P17-PC
DISKPART> list disk
Disk ### Status Size Free Dyn Gpt
Disk 0 Online 298 GB 0 B
Disk 1 Online 18 GB 4097 MB
Disk 2 Online 1967 MB 0 B
DISKPART> select disk 1
Disk 1 is now the selected disk.
DISKPART>

Figure 7 - 53
Diskpart - Select Disk #

11. Type “**create partition primary**”.
12. A “**DiskPart succeeded in creating the specified partition**.” message should appear.

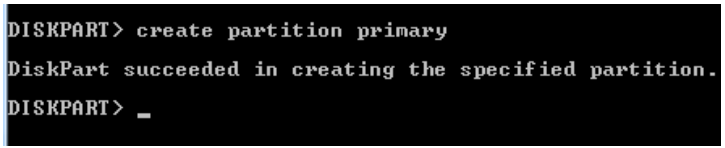


Figure 7 - 54
Diskpart - Create Partition

13. Type “**detail disk**”.

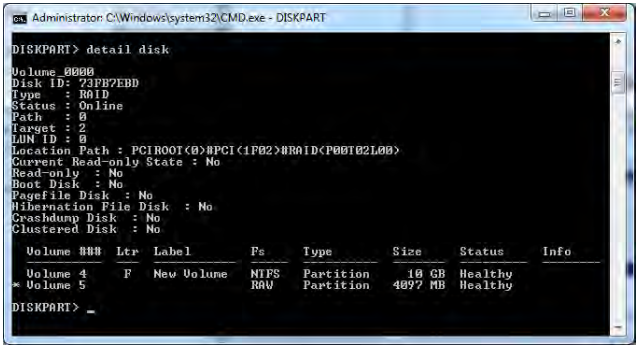

Administrator: C:\Windows\system32\CMD.exe - DISKPART
DISKPART> detail disk
Volume_0000
Disk ID: 73FB7EBD
Type : RAID
Status : Online
Path : 0
Target : 2
LUN ID : 0
Location Path : PCIROOT(0)#PCI(1F02)#RAID(P00T02L00)
Current Read-only State : No
Read-only : No
Boot Disk : No
Pagefile Disk : No
Hibernation File Disk : No
Crashdump Disk : No
Clustered Disk : No
Volume ### Ltr Label Fs Type Size Status Info
Volume 4 F New Volume NTFS Partition 10 GB Healthy
* Volume 5 RAW Partition 4097 MB Healthy
DISKPART>

Figure 7 - 55
Diskpart - Detail Disk

14. Type “**select Volume #**” (# is volume of your storage partition so refer to results obtained from "detail disk" for the exact volume number).
15. The message “**Volume # is now the selected volume.**” will appear.

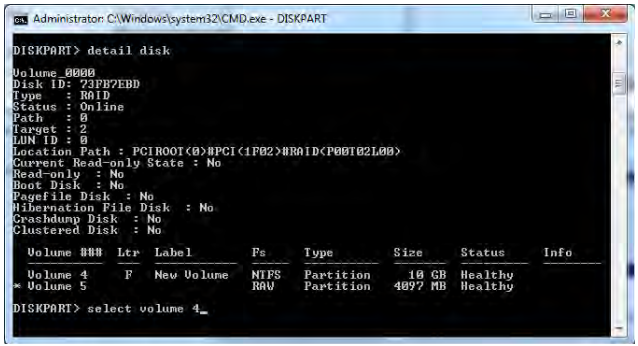

Administrator: C:\Windows\system32\CMD.exe - DISKPART
DISKPART> detail disk
Volume_0000
Disk ID: 73FB7EBD
Type : RAID
Status : Online
Path : 0
Target : 2
LUN ID : 0
Location Path : PCIROOT(0)#PCI(1F02)#RAID(P00T02L00)
Current Read-only State : No
Read-only : No
Boot Disk : No
Pagefile Disk : No
Hibernation File Disk : No
Crashdump Disk : No
Clustered Disk : No
Volume ### Ltr Label Fs Type Size Status Info
Volume 4 F New Volume NTFS Partition 10 GB Healthy
* Volume 5 RAW Partition 4097 MB Healthy
DISKPART> select volume 4

Figure 7 - 56
Diskpart - Select Volume #

16. Type the following, depending on the format of the SSD.

- For **MBR** formatted SSD's: "**set id=84 override**" (the id must be set to 84).
- For **GPT** formatted SSD's: "**set id=D3BFE2DE-3DAF-11DF-BA40-E3A556D89593**".

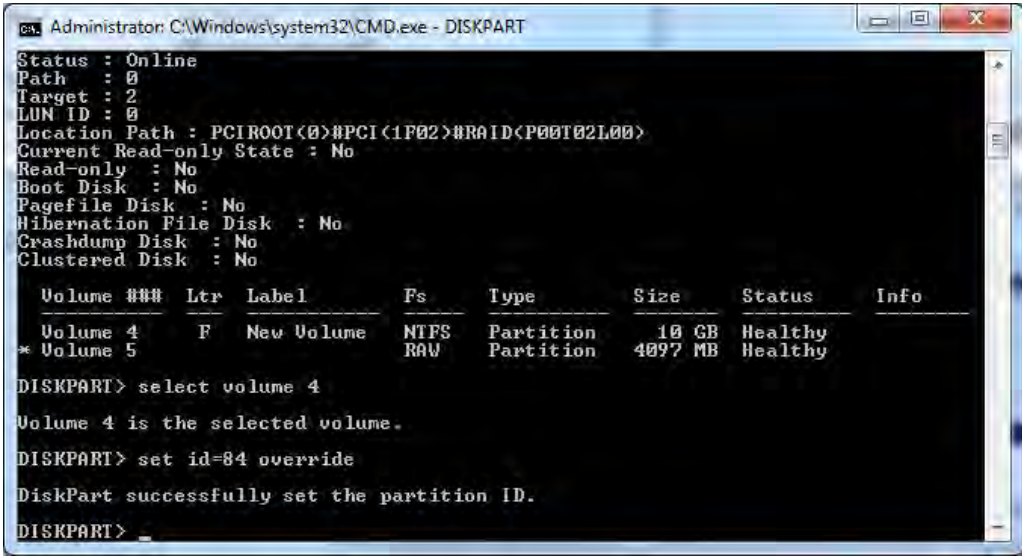

Administrator: C:\Windows\system32\CMD.exe - DISKPART
Status : Online
Path : 0
Target : 2
LUN ID : 0
Location Path : PCIROOT(0)#PCI(1F02)#RAID(P00T02L00)
Current Read-only State : No
Read-only : No
Boot Disk : No
Pagefile Disk : No
Hibernation File Disk : No
Crashdump Disk : No
Clustered Disk : No
Volume ### Ltr Label Fs Type Size Status Info
Volume 4 F New Volume NTFS Partition 10 GB Healthy
* Volume 5 RAW Partition 4097 MB Healthy
DISKPART> select volume 4
Volume 4 is the selected volume.
DISKPART> set id=84 override
DiskPart successfully set the partition ID.
DISKPART>

Figure 7 - 57
Diskpart - Set id=

17. The message "**DiskPart successfully set the partition ID.**" will appear.
18. Close the CMD window.

19. Go the ***Windows*** control panel and double-click **Administrative Tools** (**System and Security**)**> Computer Management > Storage > Disk Management.**
20. The disk partition should read **Healthy Hibernation Partition**.

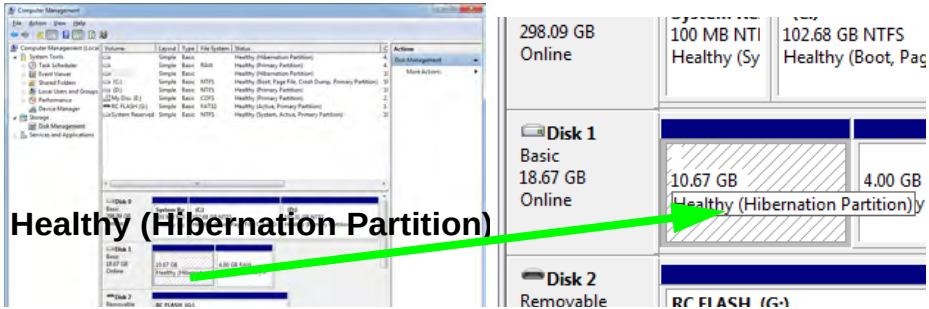


Figure 7 - 58 **Computer Management (Healthy Hibernation Partition)**

21. Restart the computer.
22. Install the driver (see below).

Intel® Rapid Start Technology Driver Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **5.Install Rapid Start Driver** > **Yes**.
4. Click **Next** > **Next** > **Yes** > **Next** > **Next**.
5. Click **Finish** to restart the computer.

Intel® Wireless Display Application

The **Intel® Wireless Display Application (requires Intel® Centrino WLAN/ Combo module)**, in conjunction with a **compatible video adapter** (purchased separately), allows you to display the contents of the notebook display on another display (e.g. HDTV) without the need to have cables stretching across a room. You can then play games, browse the internet, display videos or photo slide shows on your TV/external display without using HDMI or A/V cables.

Before configuring the **Intel® WiDi** application you will need to set up your **compatible adapter** with your display/speakers. Connect the adapter using an HDMI or A/V cable and turn on the display (or in the case of speakers connect them to the wireless speaker adapter with the cables provided with the adapter), and then set the display to the appropriate input channel (see the documentation supplied with your **compatible adapter** for full details).

Compatible Adapters

For a list of compatible display and audio adapters check the Intel website, or your distributor/ supplier.

Intel® WiDi Application Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the DVD drive.
2. Click **Option Drivers** (button).
3. Click **7.Install Intel WiDi AP > Yes**.
4. Click **Next**.
5. Click the button to accept the license and click **Next**.
6. Click **Finish**.

Intel® WiDi Application Configuration

1. Run **Intel(R) Wireless Display** from the **Start** screen.
2. Click **I agree to the terms of this license** (button).
3. The application will scan for any connected compatible adapters (or you can click the **Scan for available adapters** button to enable **Intel My WiFi Technology**).

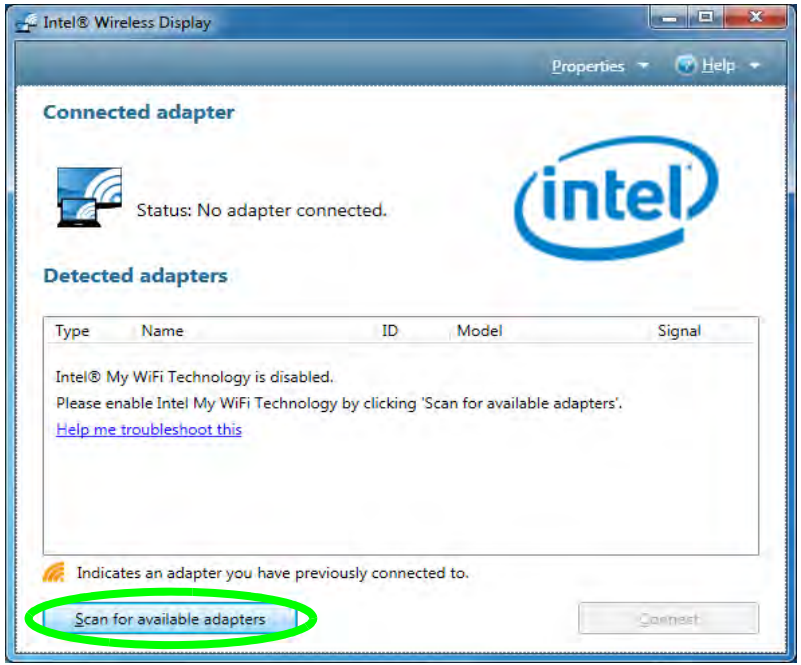


Figure 7 - 59
Intel® WiDi Scan

4. Click to select and detected adapters, and click **Connect**.
5. The system will then prompt you to enter the **4-digit security code** which will be displayed on the external TV Screen (or press the **connect** button on the wireless speaker adapter).
6. Enter the code for the video adapter and click **Continue**.

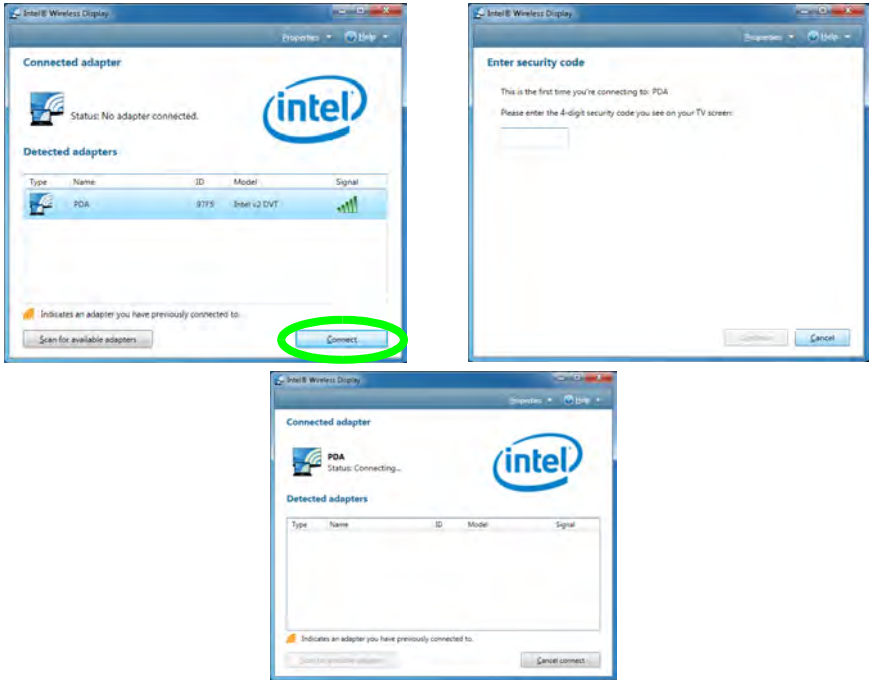
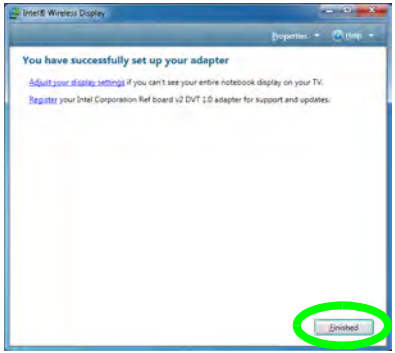
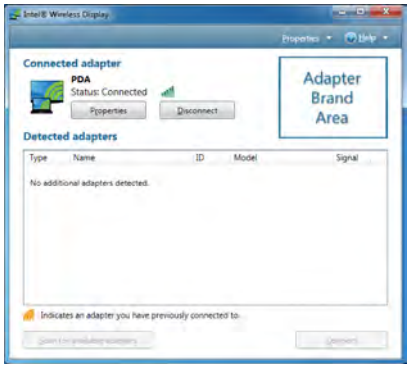


Figure 7 - 60
Intel® WiDi Connect & Enter Security Code

7. You will then be prompted to enter a name for the video adapter and click **Continue**.
8. Click **Finished** to complete the setup.

Intel® Wireless Display
Properties
Help
Rename adapter
Enter a simple name that best describes your adapter.
PDA
For example: "Living Room" or "Bedroom". The name is limited to 18 characters, consisting of the letters A through Z, numbers and punctuation marks except for '-'.
Continue


Intel® Wireless Display
Properties
Help
You have successfully set up your adapter
Adjust your display settings if you can't see your entire notebook display on your TV.
Register your Intel Corporation Ref board v2 DVT 1.0 adapter for support and updates.
Finished



Test Audio Adapter

To verify a successful audio connection (for **Intel® Wireless Music)**, select the "**Test your audio connection**" link or select "**Finished**" to bypass the test.

You can select "**Play Sample**" to play an audio test sample from your adapter to the connected speaker set.

Figure 7 - 61
Intel® WiDi Connected

Creative Software AutoUpdate

Run the application from the shortcut in the Start screen and make sure you are connected to the internet, then click Next and follow the on screen instructions to update the software.

Sound Blaster Cinema EQ

Install the **Sound Blaster Cinema EQ** to allow you to configure the audio settings to your requirements for the best performance in games, music and movies.

Sound Blaster Cinema EQ Installation

1. Insert the ***Device Drivers & Utilities + User's Manual*** disc into the CD/DVD drive.
2. Click **Option Drivers** (button).
3. Click **8.Install SB Cinema EQ > Yes**.
4. Click **Yes** to accept the license.
5. Click **Next** > **Full Installation** (button).
6. Click **Next > Finish** to restart the computer.

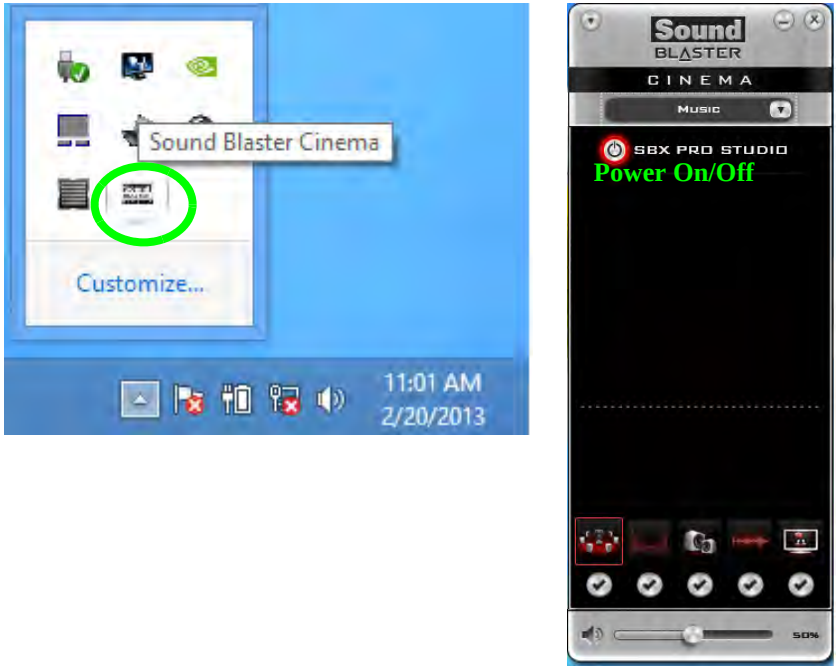
Sound Blaster Cinema EQ Activation

On the first run of Sound Blaster Cinema EQ you will need to **activate** the application.

1. To activate the application you will need to be connected to the internet.
2. Double-click the **Activate** icon on the desktop and click the **Activate** button.
3. The program will connect to the internet to verify the activation key.
4. Click **Finish** to complete the application activation.
5. Restart the computer after the process is complete.

Sound Blaster Cinema Application

Run the **Sound Blaster Cinema** control panel from the notification area of the taskbar (or from the item in the Start menu). Click on the tabs to access the any of the control panel menus.



Sound Blaster Cinema & HDMI

Note that the Sound Blaster Cinema audio effects do not apply to audio generated through an HDMI connection.

Figure 7 - 62
Sound Blaster Cinema (Taskbar Notification Area Icon & Menu)

Sound Blaster Cinema Settings

Sound Blaster Cinema selects the **built-in speakers** by default and this setting may cause some sound quality issues when using headphones. To **adjust the settings for headphones** do the following:

1. Run the **Sound Blaster Cinema** application.
2. Select **Settings** from the menu.
3. Select **Headphones** from the drop-down menu (you can adjust the slider for crossover frequency).
4. Click **OK** and close the application.

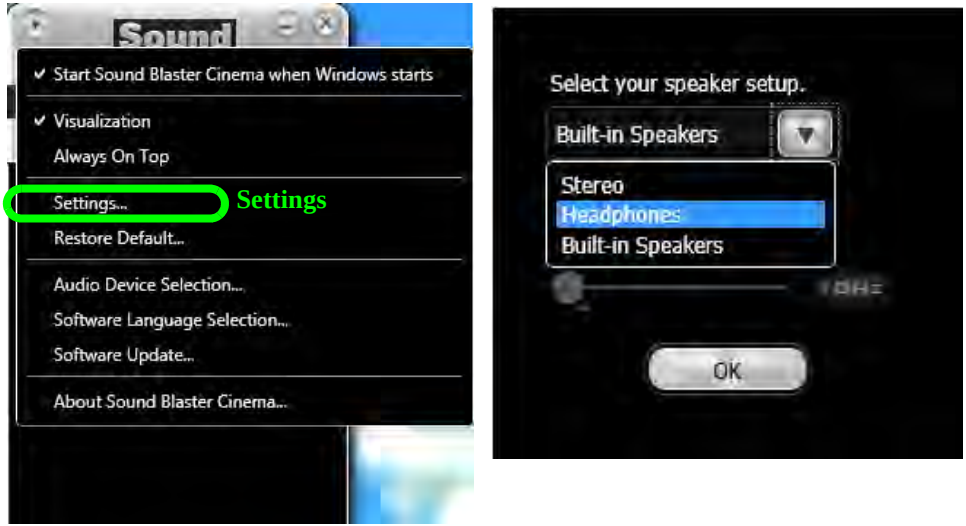


Figure 7 - 63
Sound Blaster Cinema Select Headphones

Sound Blaster Cinema Controls

Each control has an **On/Off button** to allow you to enable/disable the control, and most controls feature a slider to adjust the levels.

- **Surround:** Provides virtual sound channels to control the level of immersion.
- **Crystalizer:** Enhances audio to make it sound livelier.
- **Bass:** Enhances the bass level of the sound system.
- **Smart Volume:** Minimizes sudden volume changes to avoid the need for constant adjustment.
- **Dialog Plus:** Enhances dialogue levels for movies etc.

Settings

You can use the drop down menu to use presets for **Music**, **Movie** or **Games.** Alternatively you can use a **Custom** setting.

Figure 7 - 64
Sound Blaster Cinema Controls

Sound Blaster Cinema & HDMI

1. When you connect an HDMI display to the HDMI-Out port, the Sound Blaster Cinema controls will be disabled.
2. A warning box will pop-up and will prompt ***"...Do you want to select another audio device now?"***.
3. Click **No** to continue using the HDMI audio output from your external display (do not attempt to select another audio device when connected to the external HDMI display).

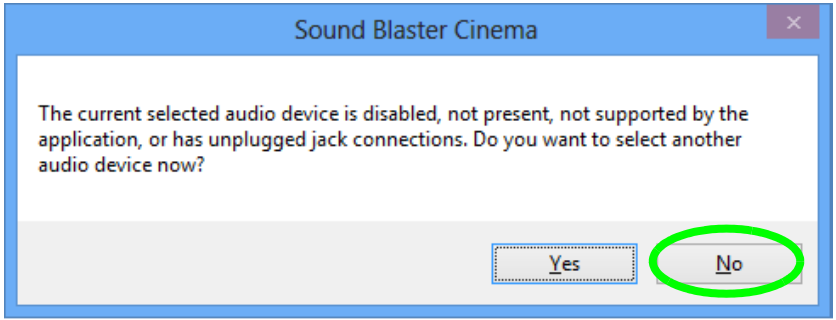

Sound Blaster Cinema
The current selected audio device is disabled, not present, not supported by the application, or has unplugged jack connections. Do you want to select another audio device now?
Yes
No

Figure 7 - 65
Sound Blaster Cinema HDMI Display Warning

3G Module

If you have included an **optional UMTS/HSPDA+** based 3G Module (Universal Mobile Telecommunications System or High Speed Packet Access) module (see *"Communication" on page D - 4* for specification details) in your purchase option, ***you do not require a driver/application installation for Windows 8***. Follow the instructions overleaf to install the USIM card (which will be provided by your service provider), and then **use the Charms Bar Wireless icon to access the 3G network** in the same manner as the WLAN (see page *7 - 83*).

Important Notice

If your purchase option includes both Wireless LAN and 3G modules, then the appropriate antennas will be installed. Note that In order to comply with FCC RF exposure compliance requirements, the antenna must not be co-located or operate in conjunction with any other antenna or transmitter.

Important Notice - 3G & Bluetooth/Wireless LAN Modules

In order to comply with FCC regulations you should NOT operate the 3G module and the Bluetooth/Wireless LAN modules at the same time as this may disrupt radio frequency, and cause interference. When the 3G module is powered on, make sure that the Bluetooth/Wireless LAN modules are powered off (use the **PC Settings > Wireless** control panel to turn on/off individual modules - see *Figure 7 - 70 on page 7 - 85*).

Power Safety Warning

Before you undertake any installation procedures, make sure that you have turned off the power, and disconnected all peripherals and cables (including telephone lines). It is advisable to also remove your battery in order to prevent accidentally turning the machine on.

USIM Card Orientation

Note that the USIM card's readable side (with the gold-colored contacts) should face upwards as illustrated.

3G Module USIM Card Installation

Follow the instructions below to install the USIM card (which will be provided by your service provider).

1. Turn **off** the computer, and turn it over.
2. Remove the battery (see ***"Removing the Battery" on page 6 - 4***).
3. Insert the USIM card (at the rear of the battery compartment) as illustrated below until it clicks fully into position, and replace the battery.

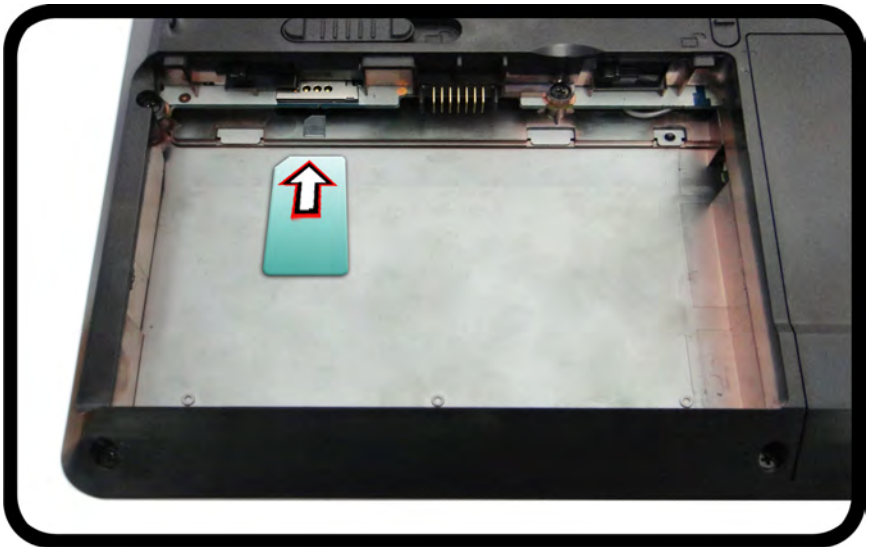


Figure 7 - 66
USIM Card Insertion

3G Configuration in Windows 8

You can configure a 3G connection as below, however make sure the system is not in Airplane Mode before configuration begins.

Charms Bar

1. Go to the **Charms Bar**.
2. Select **Settings** and then click the **WiFi icon** (it should read **Available** under the icon and **Airplane mode** should be **Off**).
3. A list of available access points will appear.

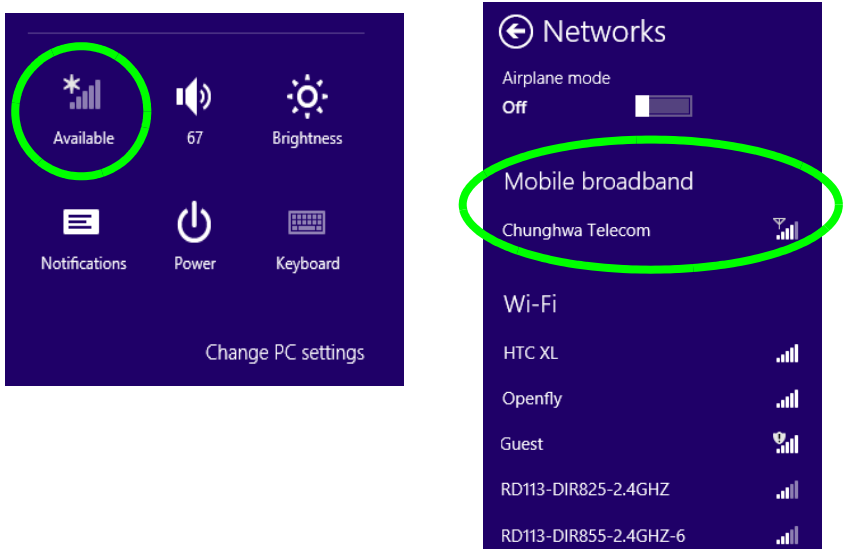


Figure 7 - 67
WiFi Settings (Charms Bar) & Networks (with Mobile Broadband)

4. Any 3G service provider (connection information is usually stored on the USIM card) will appear under Mobile Broadband.
5. Double-click any connection icon under Mobile Broadband (or click and click **Connect**).

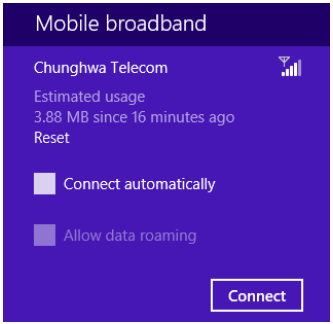


Figure 7 - 68
Mobile Broadband (Connect)

6. The system will connect to your network.
7. A **Connected** will appear alongside the 3G connection (click the connection to view the timer which indicates your connected time for the current session).

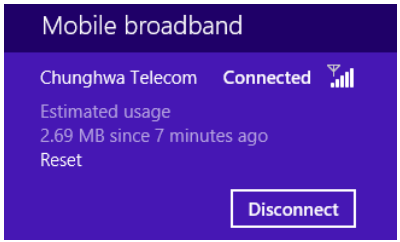
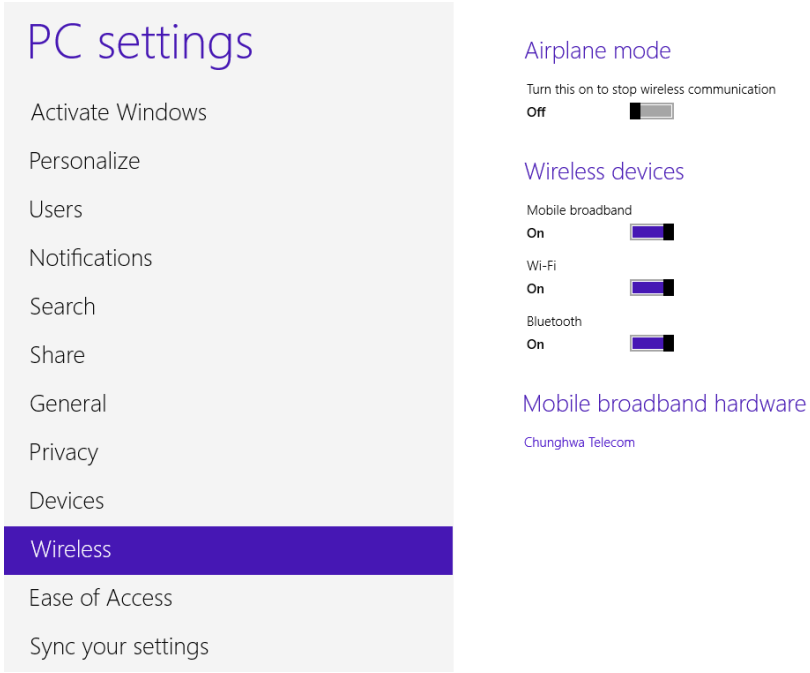


Figure 7 - 69
Mobile Broadband (Disconnect)

8. You can then access the internet, download e-mail etc. as per any internet connection.
9. To disconnect you can select the connection and click **Disconnect** Disconnect.
10. You need to either use **Airplane Mode**, or to **turn the Mobile Broadband module off** aboard aircraft.



Wireless Device Operation Aboard Aircraft

The use of any portable electronic transmission devices aboard aircraft is usually prohibited.

Make sure the system is in **Airplane Mode** if you are using the computer aboard aircraft.

Figure 7 - 70
PC Settings (Wireless)

EM820W 3G Module PIN Code & Power-Saving

Note that there may be some issues when a PIN Code is set for the EM820W 3G module (if you are unsure of your module version contact your distributor/supplier) in ***Windows 8***, Mobile Broadband has been turned off, and the system has resumed from a power-saving state. **To prevent any issues it is recommended that you simply do not enable a PIN for the EM820W 3G module**. The following provides instructions for disabling the PIN code; for specific instructions on resolving the issue where "**Insert a SIM**" appears in the connection see ***"Resolving the "Insert a SIM" issue with the 3G Module (Windows 8)" on page 8 - 19***.

Disabling a PIN code for a 3G Module

1. Go to the **Charms Bar**.
2. Select **Settings** and then click the **WiFi icon**.
3. Right-click the 3G connection and select **View connection properties**.

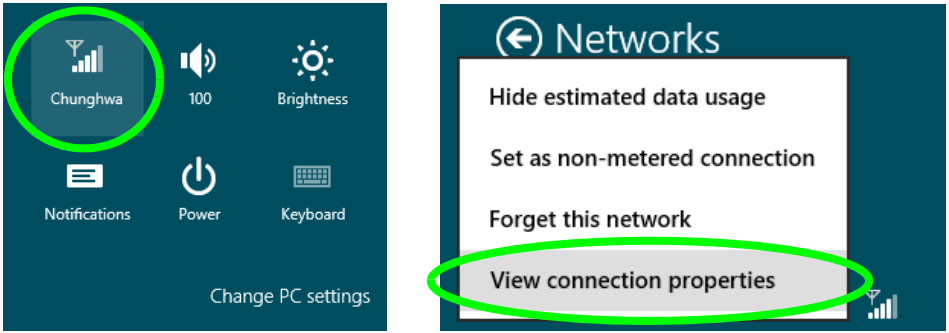


Figure 7 - 71
WiFi Settings (Charms Bar) & Right-Click Connection to View Properties

4. Click **Security** (tab) and click **Disable PIN**.
5. Enter the PIN number and click **Disable PIN** and click **OK** to confirm.
6. **It is recommended that you do not Enable a PIN for the EM820W 3G module.**

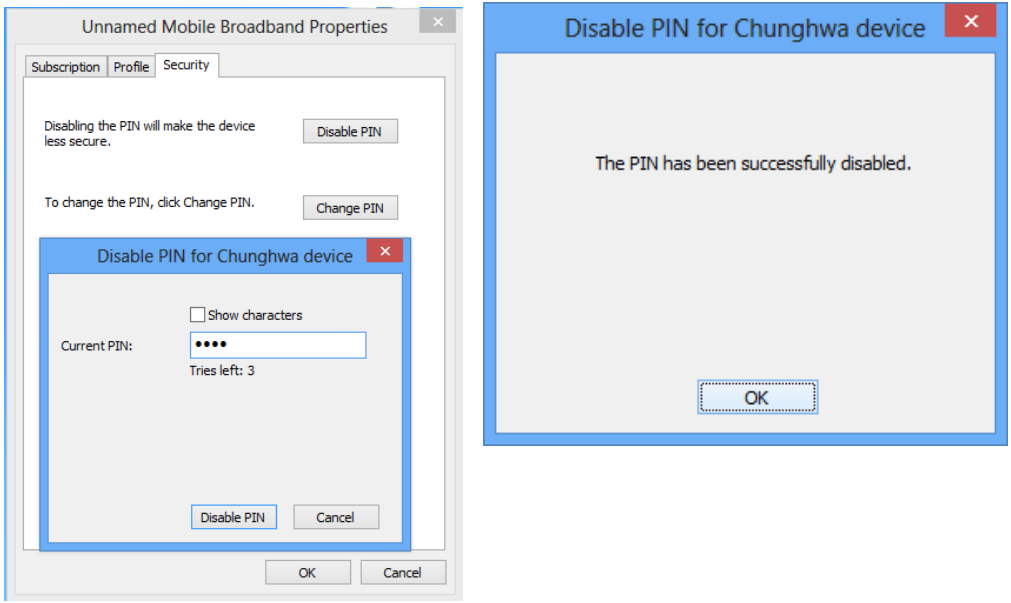


Figure 7 - 72
Disable PIN

Chapter 8: Troubleshooting

Overview

Should you have any problems with your computer, before consulting your service representative, you may want to try to solve the problem yourself. This chapter lists some common problems and their possible solutions. This can't anticipate every problem, but you should check here before you panic. If you don't find the answer in these pages, make sure you have followed the instructions carefully and observed the safety precautions in the preface. If all else fails, talk to your service representative. You should also make a record of what happened and what remedies you tried.

Of course, if something goes wrong, it will happen at the most inconvenient time possible, so you should preview this section just in case. If, after you've tried everything, and the system still won't cooperate, try turning it off for a few minutes and then rebooting. You will lose any unsaved data, but it may start working again. Then call your service representative.

Basic Hints and Tips

Many of the following may seem obvious but they are often the solution to a problem when your computer appears not to be working.

- **Power** - Is the computer actually plugged into a working electrical outlet? If plugged into a **power strip**, make sure it is actually working. Check the **LED Power Indicators** (see ***"LED Indicators" on page 1 - 9***) to see the computer's power status.
- **Connections** - Check all the **cables** to make sure that there are no **loose connections** anywhere.
- **Power Savings** - Make sure that the system is not in **Hibernate** or **Sleep** mode by pressing the keys configured in your P*ower Options* (see ***"Configuring the Power Buttons" on page 3 - 8***), the **Fn + F4** key combination, or power button to wake-up the system.
- **Brightness** - Check the brightness of the screen by pressing the **Fn** + **F8 and F9** keys to adjust the brightness (see ***Table 1 - 6, on page 1 - 14***).
- **Display Choice** - Press **Fn** + **F7** to make sure the system is not set to "external only" display.
- **Boot Drive** - Make sure there are no **optical media and/or USB storage devices** in any connected drive when you start up your machine (this is a common cause of the message "***Invalid system disk - Replace the disk, and then press any key***" / "***Remove disks or other media. Press any key to restart***").

Backup and General Maintenance

- Always **backup** your important data, and keep copies of your OS and programs safe, but close to hand. Don't forget to note the **serial numbers** if you are storing them out of their original cases, e.g. in a CD wallet.

- Run **maintenance programs** on your hard disk and OS as often as you can. You may schedule these programs to run at times when you are not using your computer. You can use those that are provided free with your OS, or buy the more powerful dedicated programs to do so.

- Write down your passwords and keep them safe (away from your computer). This is especially important if you choose to use a **Boot** password for the SCU (see *"Security Menu" on page 5 - 12*).

- Keep copies of vital **settings files** such as network, dialup settings, mail settings etc. (even if just brief notes).

Warranty

The CPU is not a user serviceable part. Opening this compartment, or accessing the CPU in any way, may violate your warranty.

Viruses

- Install an **Anti-Virus** program and keep the **definitions file** (the file which tells your program which viruses to look for) up to date. New computer viruses are discovered daily, and some of them may seriously harm your computer and cause you to lose data. **Anti-Virus** programs are commercially available and the **definitions file updates** are usually downloadable directly from the internet.

- Be careful when opening e-mail from sources you don't know. **Viruses** are often triggered from within **e-mail attachments** so take care when opening any attached file. You can configure most **Anti-Virus** programs to check all **e-mail attachments**. **Note**: You should also beware of files from people you know as the virus may have infected an **address book** and been automatically forwarded without the person's knowledge.

- Keep a "**Bootable CD-ROM/DVD-ROM/USB storage device**" (this CD/DVD/USB device provides basic information which allows you to startup your computer) handy. You may refer to your OS's documentation for instructions on how to make one, and many **Anti-Virus** programs will also provide such a disk (or at least instructions on how to make one).

Upgrading and Adding New Hardware/Software

- Do not be tempted to make changes to your **Windows Registry** unless you are very sure of what you are doing, otherwise you will risk severely damaging your system.

- Don't open your computer or undertake any repair or upgrade work if you are not comfortable with what you are doing.

- Read the **documentation**. We can assume, since you are reading this that you are looking at the computer's manual, but what about any new peripheral devices you have just purchased? Many problems are caused by the installation of new hardware and/or software. Always refer to the documentation of any new hardware and/or software, and pay particular attention to files entitled "**READ ME**" or "**READ ME FIRST**".

- When installing a new device always make sure the device is powered on, and in many cases you will need to restart the computer. Always check that all the cables are correctly connected.

- Make sure you have installed the **drivers** for any new hardware you have installed (latest **driver files** are usually available to download from vendor's websites).

- Thoroughly check any **recent changes** you made to your system as these changes may affect one or more system components, or software programs. If possible, go back and undo the change you just made and see if the problem still occurs.

- Don’t over complicate things. The less you have to deal with then the easier the source of the problem may be found; **Example** - if your computer has many devices plugged into its ports, and a number of programs running, then it will be difficult to determine the cause of a problem. Try disconnecting all of the devices and restarting the computer with all the peripheral devices unplugged. A process of elimination (adding and removing devices and restarting where necessary) will often find the source of a problem, although this may be time consuming.

Problems and Possible Solutions

Problem	Possible Cause - Solution
You turned on the **power** but it doesn't work.	*Battery missing / incorrectly installed.* Check the battery bay, make sure the battery is present and seated properly (the design of the battery only allows it to go in one way). Make sure there's nothing interfering with the battery contacts.
The battery **LED power** indicator , is blinking orange.	*Low Battery.* Plug in the DC power source. If the computer doesn't start up immediately, turn it off then on again.
You are **losing battery power** too quickly.	*The system is using too much power.* If your *OS* has a *Power Options* scheme (see ***"Power Plans" on page 3 - 4***) check its settings. You may also be using a *peripheral device/USB device* that is drawing a lot of power.
Actual **battery operating time** is shorter than expected.	*The battery has not been fully discharged before being recharged.* Make sure the battery is fully discharged and recharge it completely before reusing (see ***"Battery Information" on page 3 - 13***). *Power Options have been disabled.* Go to the **Control Panel** in *Windows* and re-enable the options. *A peripheral device/USB device is consuming a lot of power.* Turn off/remove the unused device to save power.

Problem	Possible Cause - Solution
The computer feels **too hot**.	Make sure the computer is properly ventilated and the Vent/Fan intakes are not blocked. If this doesn't cool it down, put the system into **Hibernate** mode or turn it off for an hour. Make sure the computer isn't sitting on a thermal surface (see ***"Overheating" on page 1 - 18***). Make sure you're using the correct adapter. Make sure that your notebook is completely powered off before putting it into a travel bag (or any such container). Putting a notebook which is powered on in a travel bag may cause the Vent/Fan intakes to be blocked.
Nothing appears on screen.	*The system is in a power saving mode*. Toggle the sleep/resume key combination, **Fn + F4** (see ***"Configuring the Power Buttons" on page 3 - 8***). *The screen controls need to be adjusted.* Toggle the screen control key combinations **Fn + F8/F9**. If you're connected to an external monitor, make sure it's plugged in and turned on. You should also check the monitor's own brightness and contrast controls. *The computer is set for a different display.* Toggle the screen display key combination, **Fn + F7**. If an external monitor is connected, turn it on. *The **screen saver** is activated.* Press any key or touch the **TouchPad**.
No image appears on the **external monitor** I have plugged in and powered on.	*You haven't installed the video driver and configured it appropriately from the **Control Panel**.* See ***Appendix C*** for instructions on installing and configuring the video driver.

Problem	Possible Cause - Solution
You forget the **boot password**.	*If you forget the password, you may have to discharge the battery of the CMOS.* Contact your service representative for help.
 Password Warning If you choose to set a boot password, **NEVER** forget your password. The consequences of this could be serious. If you cannot remember your boot password you must contact your vendor and you may lose all of the information on your hard disk.	
The sound cannot be heard or the **volume is very low**.	*The volume might be set too low.* Check the volume control in the ***Volume Control Panel*** in the *Windows* notification area, or use the key combination **Fn + F5** and **F6** (see ***"Function Keys & Visual Indicators" on page 1 - 14***) to adjust.
The CD/DVD **cannot be read**.	*The CD/DVD is dirty.* Clean it with a CD/DVD cleaner kit.
The CD/DVD **tray will not open** when there is a disc in the tray.	*The* CD/DVD *is not correctly placed in the tray.* Gently try to remove the disc using the eject hole (see ***"Loading Discs" on page 2 - 3***).
The **DVD regional codes** can no longer be changed.	*The code has been changed the maximum **5** times.* See ***"DVD Regional Codes" on page 2 - 5***.
Unwelcome numbers appear when typing.	*Num Lock is turned **ON*** (see ***"LED Indicators" on page 1 - 7***).

Problem	Possible Cause - Solution
Other Keyboards If your keyboard is damaged or you just want to make a change, you can use any standard USB keyboard. The system will detect and enable it automatically. However special functions/hot keys unique to the system's regular keyboard may not work.	
The **system freezes** or the screen goes dark.	*The system's power saving features have timed-out*. Use the AC/DC adapter, press the sleep (**Fn + F4**) key combination, or press the power button if no LEDs are lit.
The system never goes into a **power saving mode**.	Power Options features are not enabled. Go to the ***Windows*** Power Options menu and enable the features you prefer (see ***"Power-Saving States" on page 3 - 6***). Make sure you have enabled **Hibernate** mode from the control panel.
The **Wireless LAN/Bluetooth** modules cannot be detected.	*The modules are off as the computer is in **Airplane Mode**.* Check the LED indicator to see if it is in **Airplane Mode** (see ***"LED Indicators" on page 1 - 9***). Use the **Fn + F11** key combination to toggle **Airplane Mode** on/off (see ***Table 1 - 6, on page 1 - 14***).
The **PC Camera** module cannot be detected.	*The module is off.* Press the **Fn + F10** key combination in order to enable the module (see ***"Function Keys & Visual Indicators" on page 1 - 14***). Run the camera application to view the camera picture.

Problem	Possible Cause - Solution
The **Wireless LAN/Bluetooth** modules cannot be configured.	The driver(s) for the module(s) have not been installed. Make sure you have installed the driver for the appropriate module (see the instructions for the appropriate module in ***"Wireless LAN Module" on page 7 - 19*** and/or ***"Bluetooth & WLAN Combo Module" on page 7 - 51***).
A file cannot be copied to/from a connected **Bluetooth** device.	*The transfer of data between the computer and a Bluetooth enabled device is supported* ***in one direction only (simultaneous data transfer is not supported)***. If you are copying a file from your computer to a Bluetooth enabled device, you will not be able to copy a file from the Bluetooth enabled device to your computer until the file transfer process has been completed
I cannot obtain high speed Bluetooth data transfer.	*To obtain high speed Bluetooth data transfer take into account the following*: • To achieve high speed transfer speeds, **both devices must support high speed data transfer** (i.e both the computer and the Bluetooth compatible device you are connecting to). • Check your Bluetooth compatible device's documentation to confirm it supports high speed data transfer, and for configuration information.
The **fingerprint reader has problems scanning fingers.**	*When fingers are wet or sweaty the software application may have difficulty reading a scanned finger.* Make sure your fingers are clean and dry when attempting to scan them across the sensor for detection.

Resolving the “Insert a SIM” issue with the 3G Module (Windows 8)

1. If a PIN was set for the EM820W 3G module, you have then switched **Mobile broadband off** (or put the system in **Airplane Mode**) under **Wireless** in **PC Settings**, and the system has just resumed from a power-saving state the following error may occur.

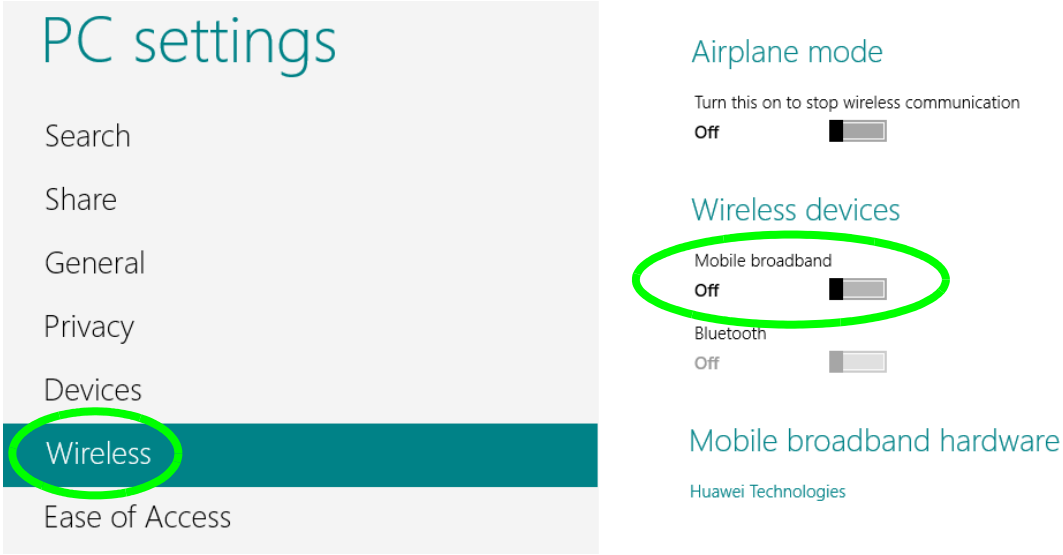


Figure 8 - 1 **- PC Settings (Charms Bar) - Wireless (Mobile Broadband Off)**

2. On resuming from the power-saving state the standard procedure would be to go to **PC Settings** in the **Charms Bar** and turn on Mobile broadband under **Wireless > Wireless Devices**.

3. Go to the **Charms Bar**.
4. Select **Settings** and you will then note that the **WiFi icon** will read **Unavailable**.
5. Standard procedure would be to click the connection and enter the PIN number to unlock the connection.
6. In this instance you will note that the **Mobile broadband** connection will read **Insert a SIM**.

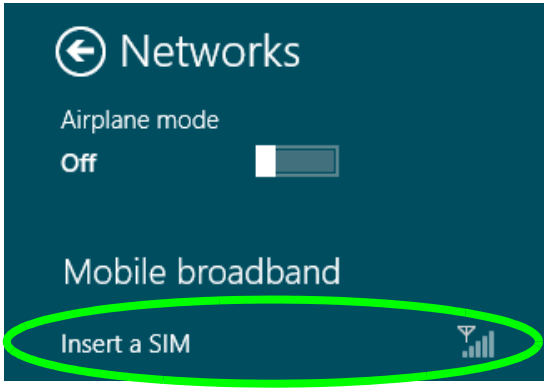


Figure 8 - 2 **- Mobile Broadband (Insert a SIM)**

7. In this case you will need to **restart the computer**.
8. After system restart you can then connect to the Mobile Broadband as normal.
9. **To fully resolve this issue it is recommended that you do not Enable a PIN for the EM820W 3G module.**

Appendix A: Interface (Ports & Jacks)

Overview

The following chapter will give a quick description of the ports & jacks which allow your computer to communicate with external devices, connect to the internet etc.

Ports and Jacks

Item	Description
Card Reader	The card reader allows you to use the following digital storage cards: MMC (MultiMedia Card) / RSMMC SD (Secure Digital) / Mini SD / SDHC / SDXC MS (Memory Stick) / MS Pro / MS Duo Push the card into the slot and it will appear as a removable device.
DC-In Jack	Plug the supplied AC/DC adapter into this jack to power your computer.
External Monitor (VGA) Port	This port allows you to connect an external monitor, or Flat Panel Display, to get dual video or simultaneous display on the LCD and external monitor/FPD.
e-SATA / USB 3.0 Combo Port /e-SATA	This **e-SATA** (**external Serial Advanced Technology Attachment**) port allows you to plug-in external Serial ATA hard drives. This port also serves as a USB 3.0 port.

Item	Description
HDMI-Out Port	The HDMI-Out (**High-Definition Multimedia Interface**) port is an audio/video connector interface for transmitting uncompressed digital streams. This allows you to connect an external monitor, TV or Flat Panel Display etc. as a display device by means of a HDMI cable. **Note that HDMI carries both audio and video signals** (see ***"HDMI Audio Configuration" on page C - 35***).
Headphone-Out Jack	**Headphones** or **speakers** may be connected through this jack. **Note**: Set your system's volume to a reduced level before connecting to this jack.
Microphone-In Jack	Plug an external microphone in to this jack to record on your computer.
RJ-45 LAN Jack	This port supports LAN (Network) functions. **Note**: Broadband (e.g. ADSL) modems usually connect to the LAN port.
S/PDIF-Out Jack	This S/PDIF (**Sony/Philips Digital Interface Format**) Out Port allows you to connect your DVD-capable PC to a Dolby AC-3 compatible receiver for "5.1" or 'dts' surround sound.
Security Lock Slot	To prevent possible theft, a Kensington-type lock can be attached to this slot. Locks can be purchased at any computer store.

Interface (Ports & Jacks)

Item	Description
USB 2.0/1.1 Ports USB 3.0 Port 	These USB (**Universal Serial Bus**) 2.0 compatible ports (USB 2.0 is fully USB 1.1 compliant) are for low-speed peripherals such as keyboards, mice or scanners, and for high-speed peripherals such as external HDDs, digital video cameras or high-speed scanners etc. Devices can be plugged into the computer, and unplugged from the computer, without the need to turn the system off (if the power rating of your USB device is 500mA or above, make sure you use the power supply which comes with the device). The USB 3.0 ports are denoted by their blue color (and is not operational under DOS); USB 2.0 ports are colored black. USB 3.0 will transfer data much faster than USB 2.0, and is backwards-compatible with USB 2.0.

Appendix B: Control Center

Overview

The following chapter will give a quick description of the functions of the **Control Center**. The **Control Center** gives quick access to frequently used controls, power management features and enables you to quickly turn modules on/off. Click the **Control Center** icons to toggle the appropriate function, or hold the mouse button down and move the slider where applicable. Certain functions will automatically be adjusted when a power mode is selected. The **Control Center** in ***Windows 8*** works under the **Desktop** app and not under the Start screen.

Figure B - 1 **- Control Center**

Power Modes

You can set a **Power Mode** by clicking the appropriate icon at the top of the **Control Center**. Each power mode will affect screen brightness, Touchpad and PC camera power etc.

You can click a **Control Center** icon to set an overall power mode and then click individual icons in the **Control Center** to power on/off the Touchpad and PC camera.

Modes		Power Saving	Entertainment	Quiet	Performance	User Defined
Icon						
Power Plan		Power Saver	Power Saving	Power Saving	High Performance	User Defined
Power Conservation Mode		Energy Star	Energy Star	Energy Star	Performance	
Brightness		10	100	40	100	
PC Camera		OFF	OFF	ON	ON	
TouchPad		ON	ON	ON	ON	

Table B - 1- **Power Modes**

Power Status

The **Power Status** icon will show whether you are currently powered by the battery, or by the AC/DC adapter plugged in to a working power outlet. The power status bar will show the current battery charge state.

Brightness

The **Brightness** icon will show the current screen brightness level. You can use the slider to adjust the screen brightness or the **Fn + F8/F9** key combinations, or use the **Fn+ F2** key combination to turn off the LED backlight (press any key to turn it on again). Note that screen brightness is also effected by the **Power Mode** selected (see *Table B - 1, on page B - 2*).

Volume

The **Volume** icon will show the current volume level. You can use the slider to adjust the Volume or the **Fn + F5/F6** key combinations, or use the **Fn+ F3** key combination to mute the volume.

Power Conservation

This system supports **Energy Star** power management features that place computers (CPU, hard drive, etc.) into a low-power sleep modes after a designated period of inactivity (see *"Power Conservation Modes" on page 3 - 11*). Click either the **Performance**, **Balanced** or **Energy Star** button.

Sleep

Click the **Sleep** button to bring up the **Hibernate** or **Sleep** buttons, and click either button to have the computer enter the appropriate power-saving mode (see *"Power-Saving States" on page 3 - 6*).

Display Switch

Click the **Display Switch** button to access the menu (or use the + **P** key combination) and select the appropriate attached display mode (see page *C - 24*).

Time Zone

Clicking the **Time Zone** button will access the **Date and Time** ***Windows*** control panel.

Desktop Background

Clicking the **Desktop Background** button will allow you to change the desktop background picture.

TouchPad/PC Camera

Click either of these buttons to toggle the TouchPad or camera module's power status. A crossed out icon will appear over the top left of the icon when it is off. Note that the power status of the camera module is also effected by the **Power Mode** selected (see *Table B - 1, on page B - 2*).

Caps Lock/Scroll Lock/ Number Lock

Click the button to toggle the appropriate lock mode.

Appendix C: Video Driver Controls

The basic settings for configuring the LCD are outlined in *"Video Features" on page 1 - 32*.

Video Driver Installation

Make sure you install the drivers in the order indicated in *Table 4 - 1, on page 4 - 3*. Insert the *Device Drivers & Utilities + User's Manual* disc and click ***Install Drivers*** (button).

Video (VGA)

1. Click **2.Install VGA Driver > Yes**.
2. Click **Next > Yes > Next > Next**.
3. Click **Finish** to restart the computer.

NVIDIA Video (VGA)

1. Click **3.Install NVIDIA VGA Driver > Yes**.
2. Click **AGREE AND CONTINUE (**button) to accept the terms of the license agreement.
3. Click **Next.**
4. Click **Close** to complete the installation.

Video Card Options

Note that card types, specifications and drivers are subject to continual updates and changes. Check with your distributor/supplier for the latest details on video cards supported (**see** *"Video Adapter Options" on page D - 2*).

C

iGPU or dGPU

Note the NVIDIA control panel refers to **High-performance NVIDIA processor** (which is the discrete GPU) and **Integrated graphics** (which is the integrated GPU).

NVIDIA® Optimus™ Technology

Most notebook computers come with either a **discrete** or **integrated** graphics solution.

Discrete graphics solutions feature a dedicated Graphics Processing Unit (GPU) which are capable of playing games, watching HD video or running GPU-based applications. However computers with discrete graphics solutions tend to be heavy in power consumption, and slightly larger in size in order to incorporate the dedicated discrete GPU.

Integrated graphics solutions usually feature memory sharing technology to help save power consumption and allow for longer battery life. However computers with integrated graphics solutions will not usually run games, HD video or GPU-based applications without severe limitations.

Nvidia® Optimus™ technology is a seamless technology designed to get best performance from the graphics system while allowing longer battery life, without having to manually change settings. Thus when an application is run that requires extra performance or quality, then the system will run the discrete GPU (dGPU); when the system does not require such enhanced performance it will let the integrated (iGPU) handle it.

How Optimus Technology works

When the system is powered up and is displaying just the desktop, the dGPU will be powered off. In this case the system is running in the same way as a system without a discrete graphics solution. However when an application that requires use of the dGPU is run (e.g, a game or HD Video), the dGPu is powered on and takes over the processing duties. If the program is closed, then the dGPU will be powered back down again until required.

UMA Mode & Performance

UMA Mode is designed for **maximum power saving**, however this does have an affect on the system's overall video performance (as it is based on the Power saver power plan).

If you require better video performance then it is recommended that you use **Optimus Mode**. Alternatively you may switch the **UMA Mode** power plan to Balanced (however power savings will be reduced in this case).

Note that when the power plan is set to UMA Mode the GPU LED indicators may no longer display the correct status.

Customization Options

Although **Optimus** is completely seamless to the user, NVIDIA also allow customization options within the control panel (see ***"Optimus™ Customization Options" on page C - 29***).

GPU Button

This computer also features a button that allows the user to switch between **Optimus Mode** and **UMA Mode** (Unified Memory Architecture). **UMA Mode** will use only the integrated GPU; **Optimus Mode** will allow the system to automatically determine whether the **dGPU** or **iGPU** is used. Thus the user can completely control how the graphics system operates. Press the GPU button, and the button color will indicate the current mode.

Table C - 1
GPU Button Modes

Icon	Color	Description	Power Plan
	Green	**UMA Mode** Activated - The system will use the integrated GPU (iGPU) only	UMA Mode
	Orange	**Optimus Mode** Activated - Optimus technology will determine when to use the integrated GPU (iGPU) or discrete (dGPU) automatically	Balanced

The **GPU LED indicators** will display which GPU is currently in use.

Table C - 2
GPU LED Indicators

Icon	Color	Description
	Green	Integrated GPU (**iGPU**) Activated
	Orange	Discrete GPU (**dGPU**) Activated

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Intel® Dynamic Video Memory Technology

Intel® DVMT automatically and dynamically allocates as much (up to **1748MB**) system memory (RAM) as needed to the integrated video system (**the video driver must be installed**). DVMT returns whatever memory is no longer needed to the operating system.

Intel® Graphics & Media Control Panel

Advanced video configuration options are provided by the **Intel® HD Graphics Control Panel**. To access the control panel see below and overleaf:

1. Click the **Intel® Graphics and Media Control Panel** icon in the **Start** screen.

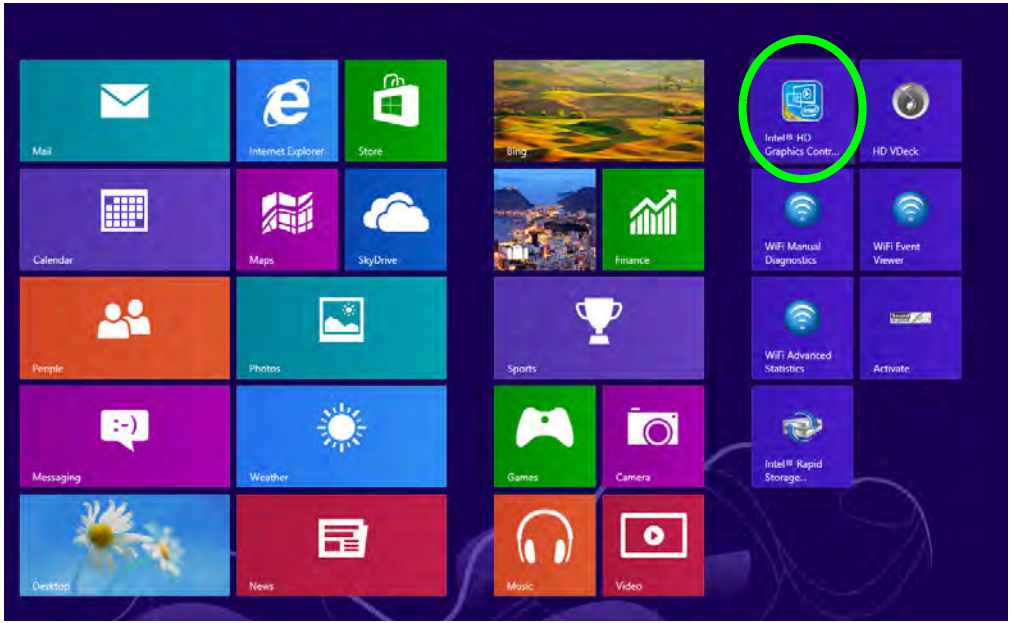


Figure C - 1
Start Screen
Intel® G&M Control Panel

(see over)

OR

2. Right-click the **Desktop** and select **Graphics Properties** from the menu.

OR

3. Click **Advanced settings** in the **Screen Resolution** control panel in ***Windows***.
4. Click the **Intel(R) HD Graphics Control Panel** tab and click **Graphics Properties** (button).
5. Double-click the **Intel(R) HD Graphics** control panel in the ***Windows Control Panel***.

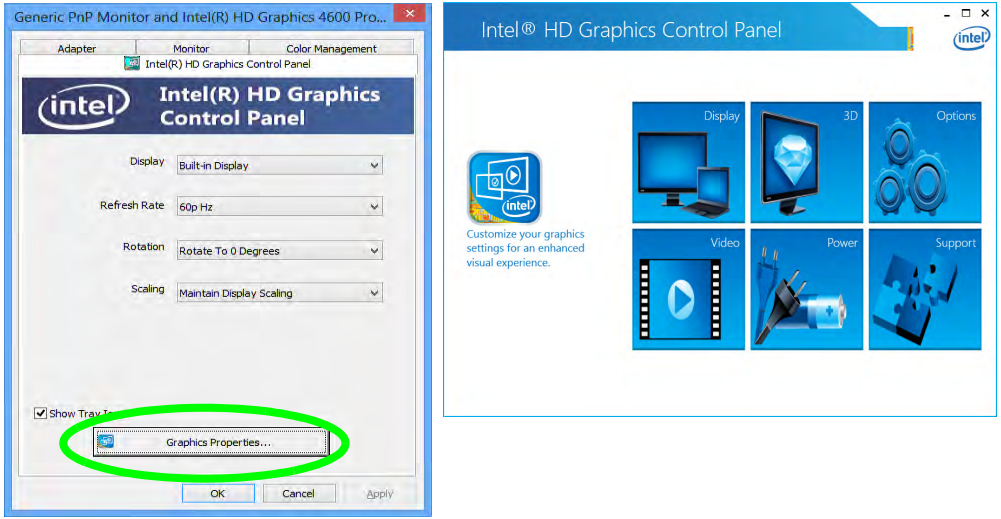


Figure C - 2
Intel® HD Graphics Control Panel

C

Video Driver Controls

You may make changes to any of the graphics properties by clicking the appropriate menu panel and adjusting the settings on the right.

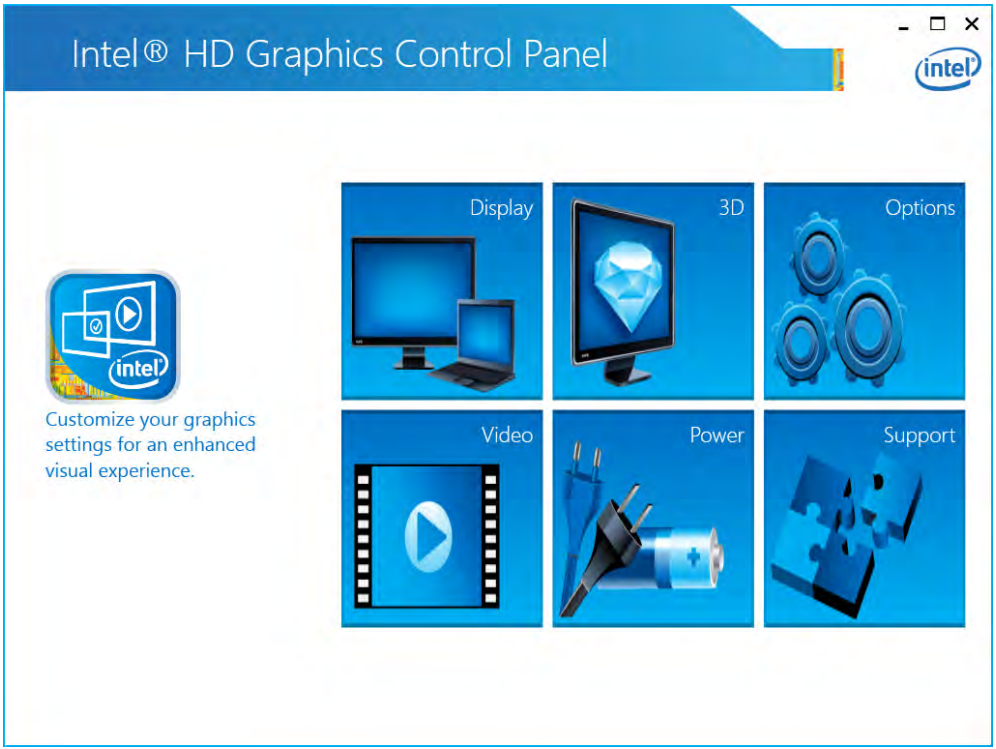


Figure C - 3
Intel® HD Graphics Control Panel

C

Sub-Menus

Some of the menu panels will also have sub-menus (in the top left corner of the menu alongside the icon) to display further configuration options.

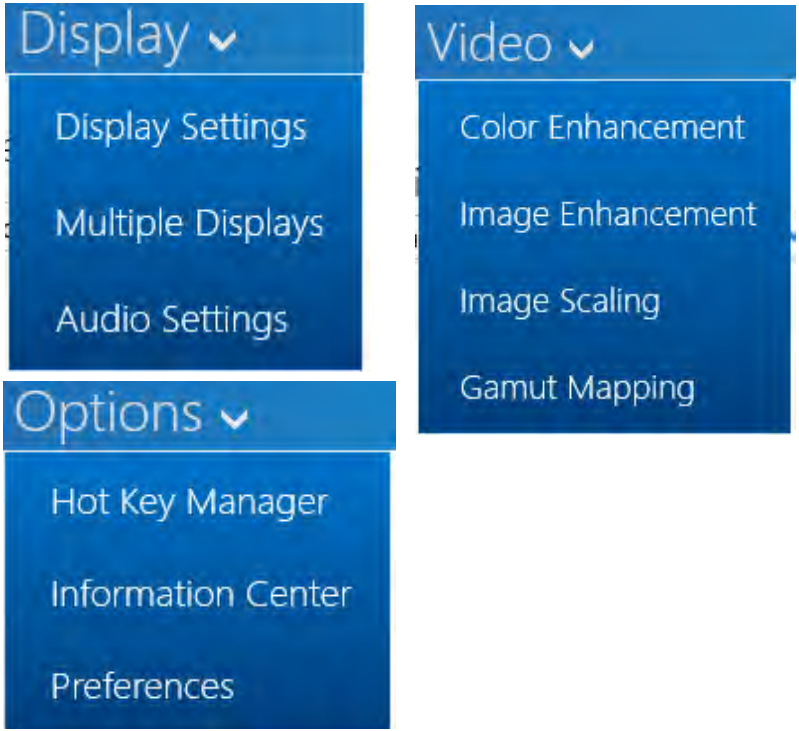


Figure C - 4
Intel® HD Graphics Control Panel Sub-Menus

C

Multiple Display

At least one other display must be attached in order to view multiple display selection options.

Display

Click either **Display Settings** or **Color** to make display adjustments, including configuration for any attached external displays.

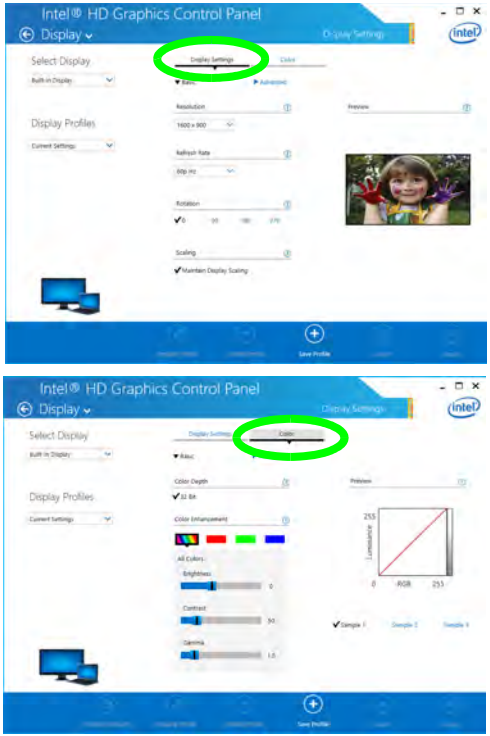
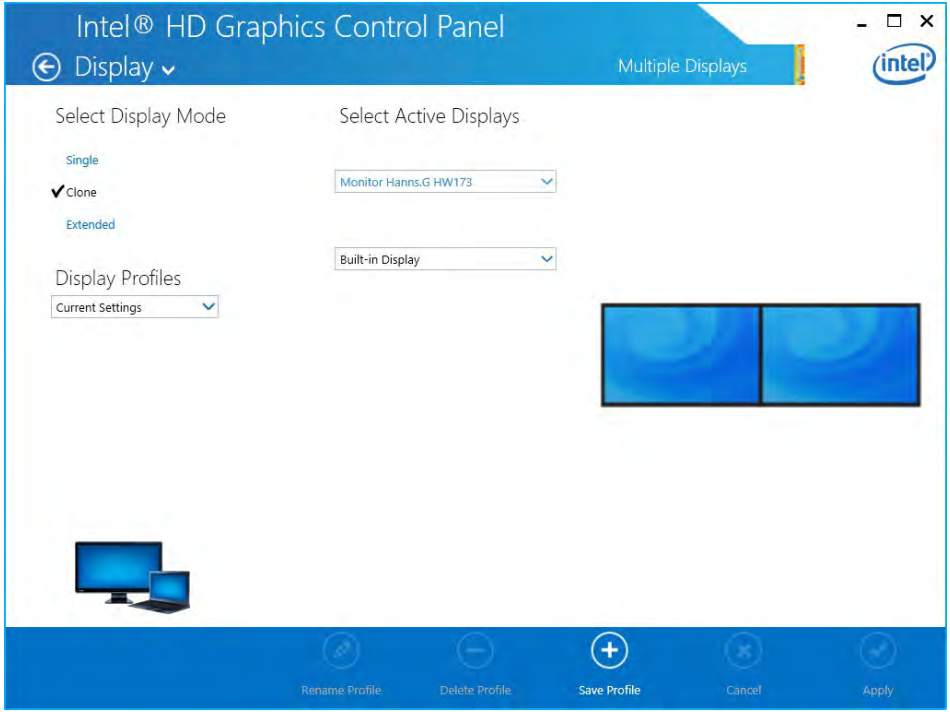


Figure C - 5
Intel® HD Graphics Control Panel Display Settings

Click the **Display** menu at the top of the screen to display the sub-menus. The **Multiple Displays** menu allows you to configure the display mode of any attached displays (see *"Attaching Other Displays" on page C - 22*).



Multiple Display

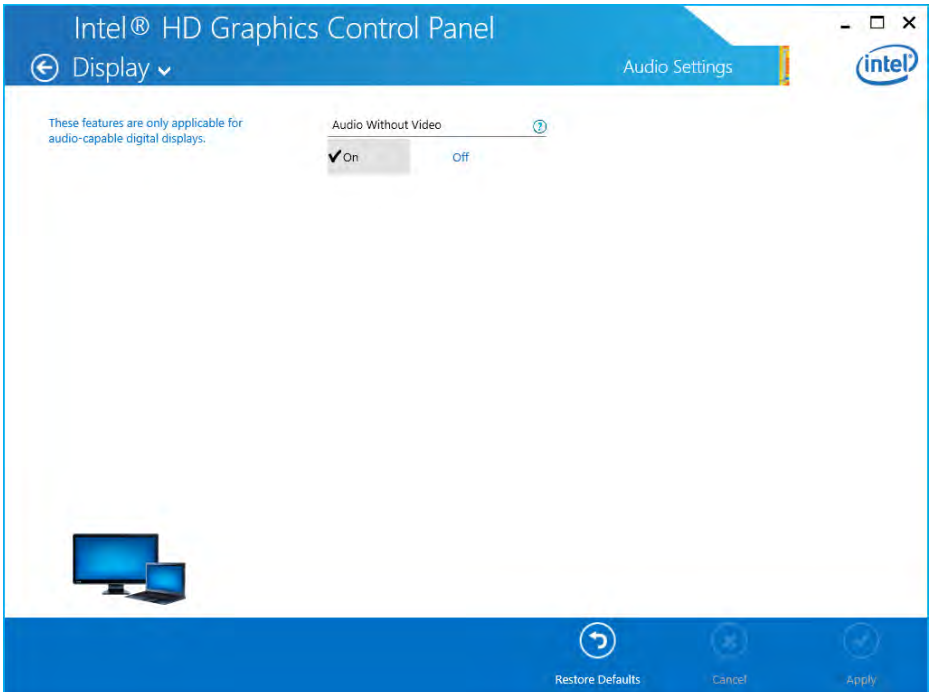
At least one other display must be attached in order to view multiple display selection options.

Figure C - 6
Intel® HD Graphics Control Panel Display Settings - Multiple Displays

C

The **Audio** sub-menu allows you to configure the capability mode of any attached displays if applicable (i.e. the attached display supports audio). **Enable Audio Without Video** to keep audio on when the display blanks out for power saving purposes.

Figure C - 7
Intel® HD Graphics Control Panel Display Settings - Audio



3D

This menu allows you to choose how 3D images are displayed. **Quality** displays the most detail, **Balanced** provides better computer performance with good quality and **Custom** allows you to configure the **Anisotropic Filtering**, **Vertical Sync** and **Anti-Aliasing** features to your preferences. Click **Apply** to save changes.

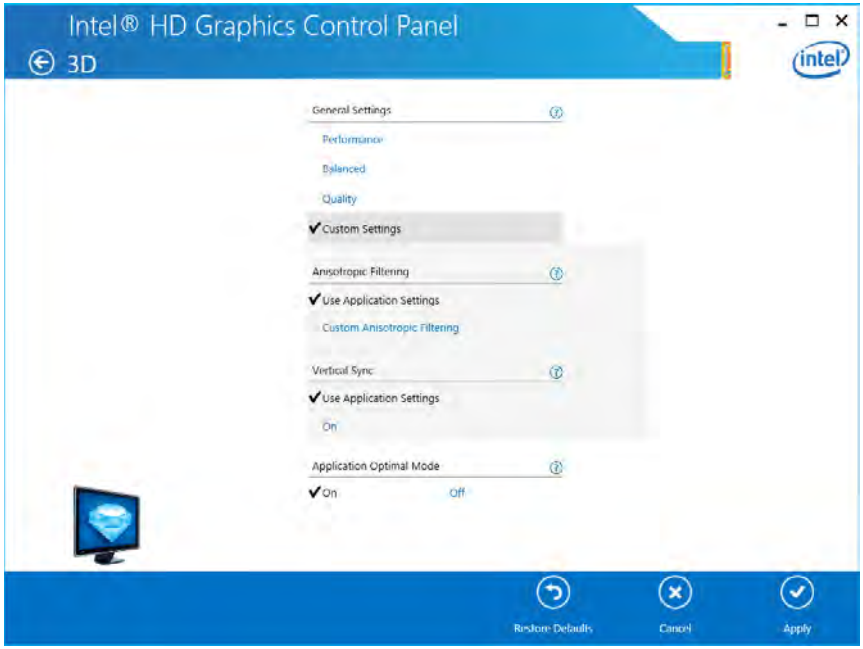


Figure C - 8
Intel® HD Graphics Control Panel 3D

Options

Options allows you to **Customize Hot Keys** (for opening the application, rotating the display, scaling etc.,) to your preferences. Click **Apply** to save changes.

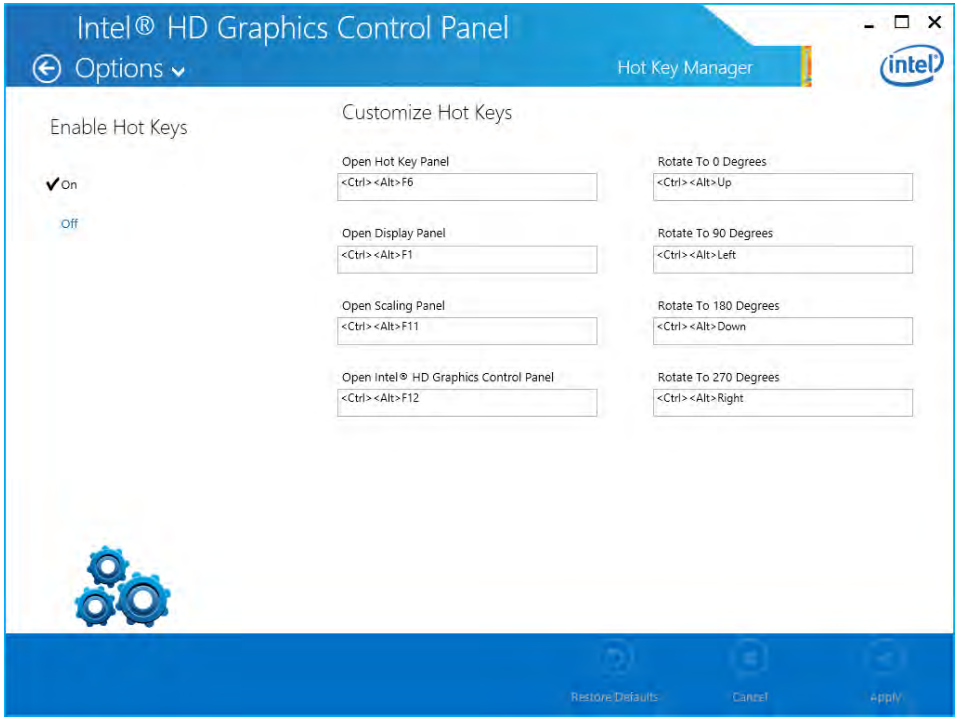
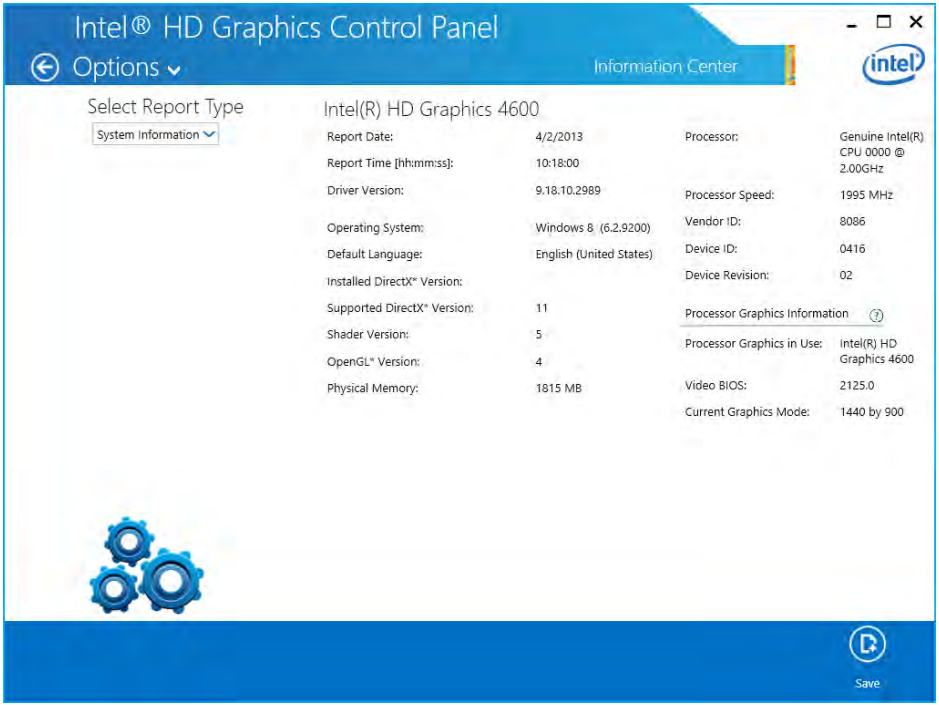


Figure C - 9
Intel® HD Graphics Control Panel Options

Click the **Options** menu at the top of the screen to display the sub-menus. The **Information Center** provides details on **System Information**, the **Built-In Display** and any **attached displays**.



Preferences

Go to the **Preferences** sub-menu in Options to configure the preferences for the Intel® HD Graphics Control Panel.

Make sure you turn Tray Icon On to display the Intel® HD Graphics Control Panel icon in the notification area of the taskbar (as below).

Figure C - 10
Intel® HD Graphics Control Panel Options - Information Center

C

Video

The **Video Profiles** menu allows you to brighten or darken movies, or to switch to vivid colors. Click **Basic** or **Advanced** to adjust the video settings based on the **Application Settings** or **Driver Settings**. The **Preview** image will display a sample image using the current settings. You can **Save Profile** and name the Profile to recall the settings at any time. Click **Apply** to save changes.

Figure C - 11
Intel® HD Graphics Control Panel Video (Basic - Driver Settings)

C

Click the **Video** menu at the top of the screen to display the sub-menus.The **Image Enhancement** menu allows you to adjust the **Sharpness**, **Skin Tone Enhancement**, **Noise Reduction** etc.Click **Apply** to save changes.

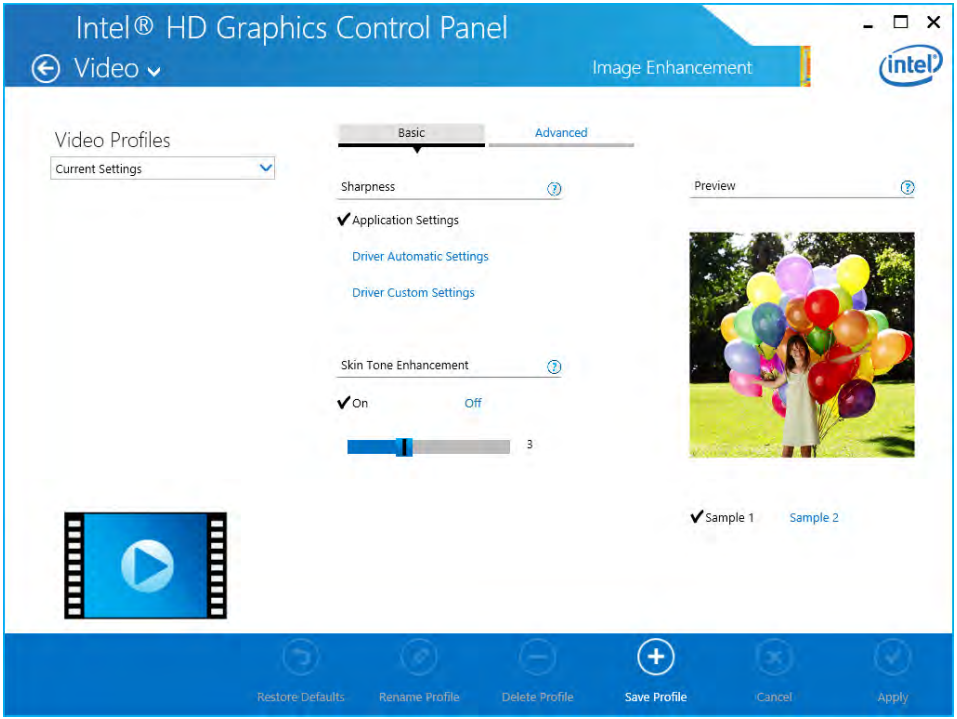


Figure C - 12
Intel® HD Graphics Control Panel Video Image Enhancement Basic

C

The **Image Scaling** and **Gamut Mapping** menus allow you to adjust these items.

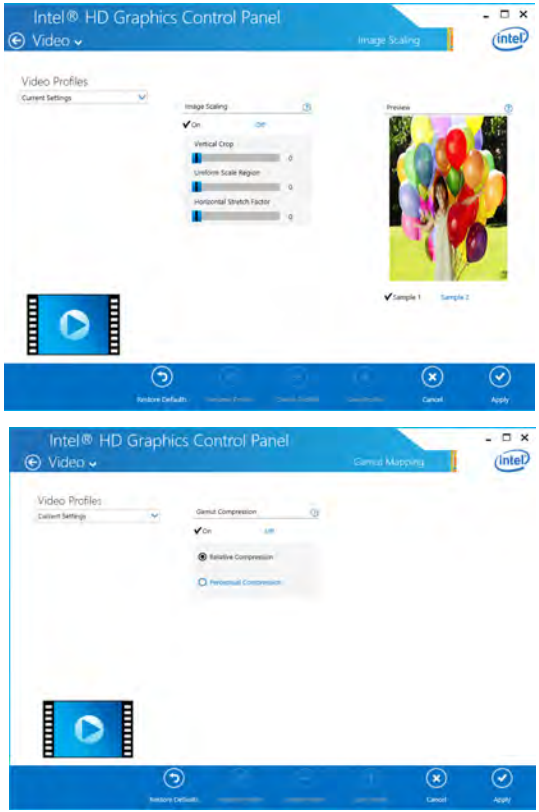


Figure C - 13
Intel® HD Graphics Control Panel Video Image Scaling & Gamut Mapping

Power

Choose a Power Plan for when the computer is **Plugged in** or **On battery**. When turned on, the **Display Power Saving Technology** (which adjusts the backlight intensity) battery settings may be adjusted by means of the slider towards **Maximum Quality** or **Maximum Battery**. Click on **Apply** to save changes.

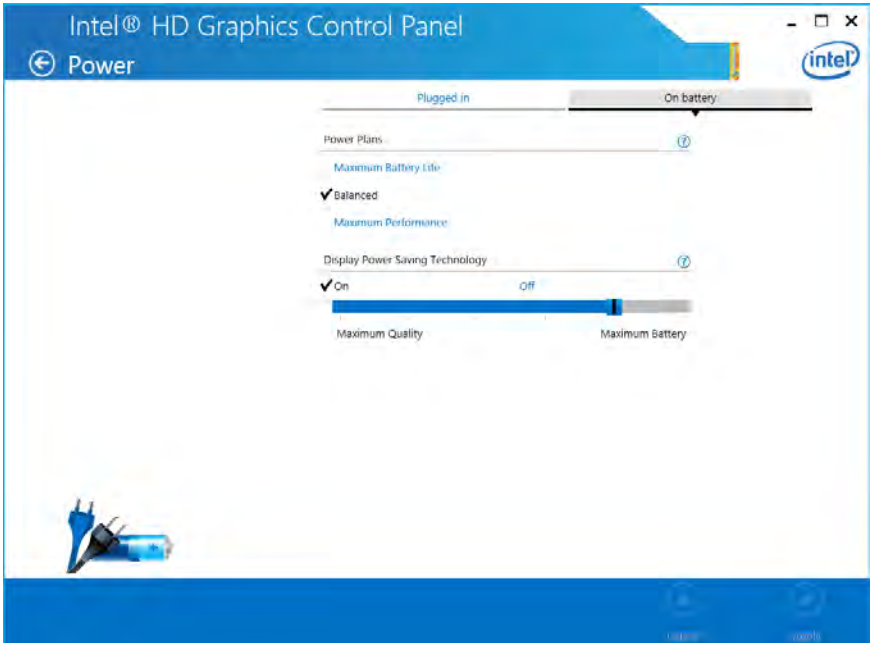


Figure C - 14
Intel® HD Graphics Control Panel Power (Battery Settings)

C

Support

Click **Support** and select an item from the menus to bring up the help and support topics. You will need to be connected to the Internet to access the key resource links.

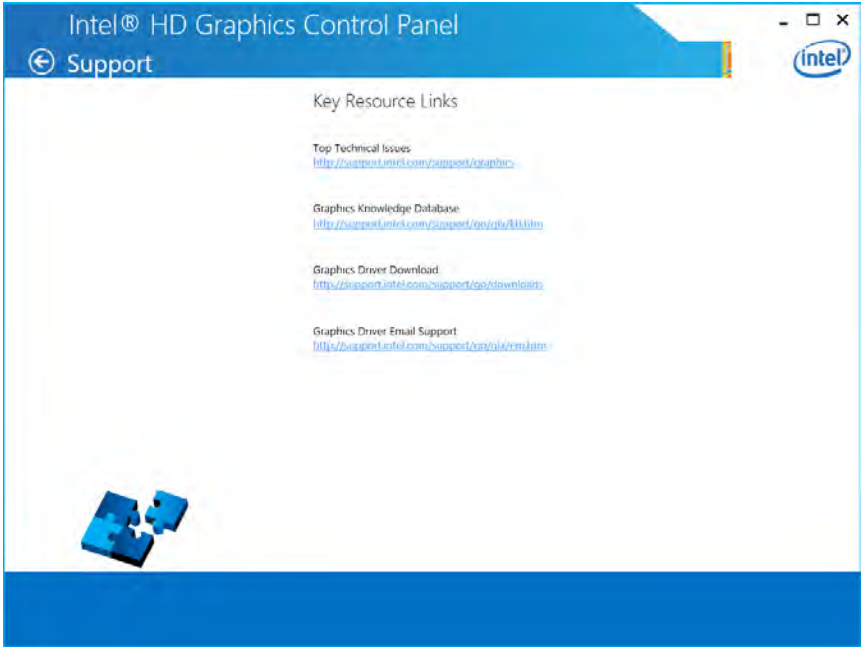


Figure C - 15
Intel® HD Graphics Control Panel Support

Display Devices & Options

Note that you can use external displays connected to the HDMI-Out port and/or external monitor port. See your display device manual to see which formats are supported.

Attaching Displays

When you first attach an external display you may find that the desktop does not occupy the full screen area. Use either the display's auto adjust/configure controls, or the Intel(R) HD Graphics Control Panel to configure the full screen display.

Display Mode (Intel / Win8)	Description
Single Display	One of the connected displays is used as the display device (**PC screen only** or **Second screen only**).
Clone/Duplicate	Both connected displays output the same view and may be configured independently
Extended / Extend	Both connected displays are treated as separate devices, and act as a virtual desktop

Table C - 3
Display Modes

C

Multiple Display

At least one other display must be attached in order to view **Multiple Display** selection options.

Attaching Other Displays

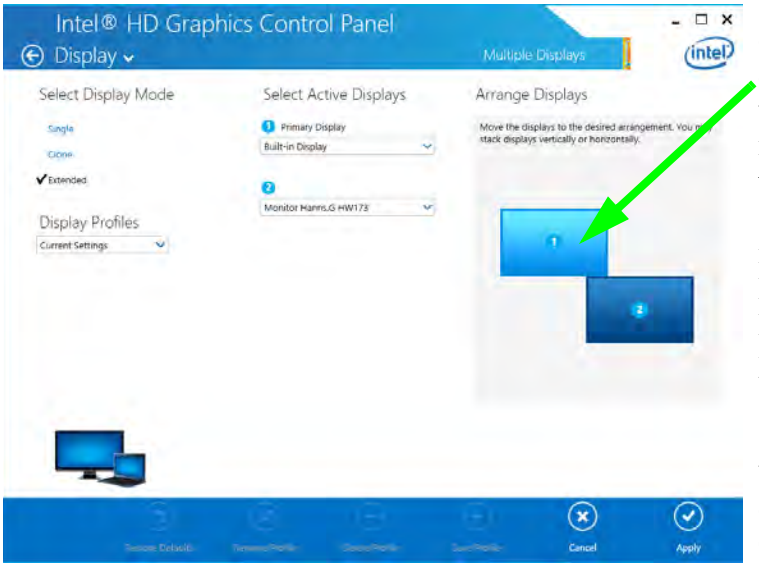
To Clone Displays:

1. Attach your external display to the external monitor port/HDMI-Out port, and turn it on.
2. Go to the **Intel(R) HD Graphics Control Panel** control panel and click **Display > Multiple Displays** (sub-menu).
3. Click **Clone** from the **Select Multiple Display Mode** menu.
4. Click **Apply**, and **OK** to confirm the settings change.
5. You can select the **displays to be used** from the **Select Active Displays** menu.

Figure C - 16
Display > Multiple Displays (Clone)

To Enable Extended Mode:

1. Attach your external display to the external monitor port/HDMI-Out port, and turn it on.
2. Go to the **Intel(R) HD Graphics Control Panel** control panel and click **Display > Multiple Displays** (sub-menu).
3. Click **Extended** from the **Select Multiple Display Mode** menu.
4. Click **Apply**, and **OK** to confirm the settings change.



Click the appropriate monitor icon and drag it to match the physical arrangement you wish to use (e.g. the secondary display may be extended left/right/above/below the primary display).

Click **Display Settings** to make any adjustments required.

Display Settings Extended Desktop

You can have different Colors, Screen Area and Monitor Refresh Rates for each display device **provided your monitor can support them**.

You can drag the monitor icons to match the physical layout of your displays. Icons and programs may also be dragged between the displays.

Figure C - 17
Display > Multiple Displays (Extended)

C

Windows Logo Key + P Key Combination

You can use the + P key combination to quickly bring up the **Second Screen** menu.

You can also use the **Display Switch** button in the **Control Center** to access the menu and select the appropriate attached display mode.

You can also use the **Fn +F7** key combination to quickly access the **Second Screen** menu in ***Windows 8***.

Attaching Other Displays - Devices (Charms Bar)

You can configure attached displays from **Devices** (in the ***Windows 8*** **Charms Bar**).

1. Attach your external display to the external monitor port/HDMI-Out port, and turn it on.
2. Go the **Charms Bar** and select **Devices**.
3. Click **Second Screen**.
4. Click on any one of the options from the menu to select **Duplicate**, **Extend** or a Single (**PC Screen only** or **Second Screen only**) display.

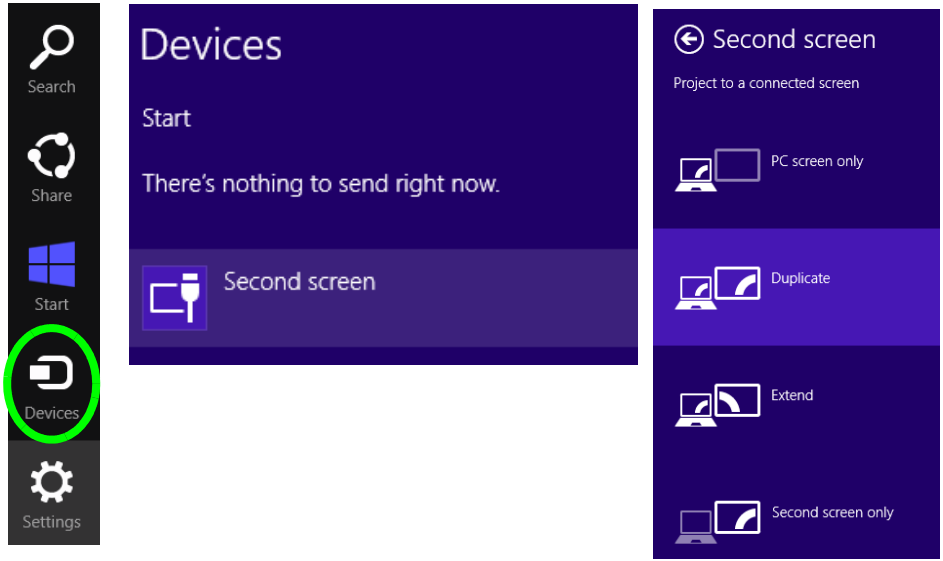


Figure C - 18
Second Screen (Devices)

Configuring an External Display In Windows

1. Attach your external display to the external monitor port/HDMI-Out port, and turn it on.
2. Go to the **Screen resolution** control panel (see page ***1 - 32***) in the Desktop app.
3. Click the **Detect** button.
4. The computer will then detect any attached displays.

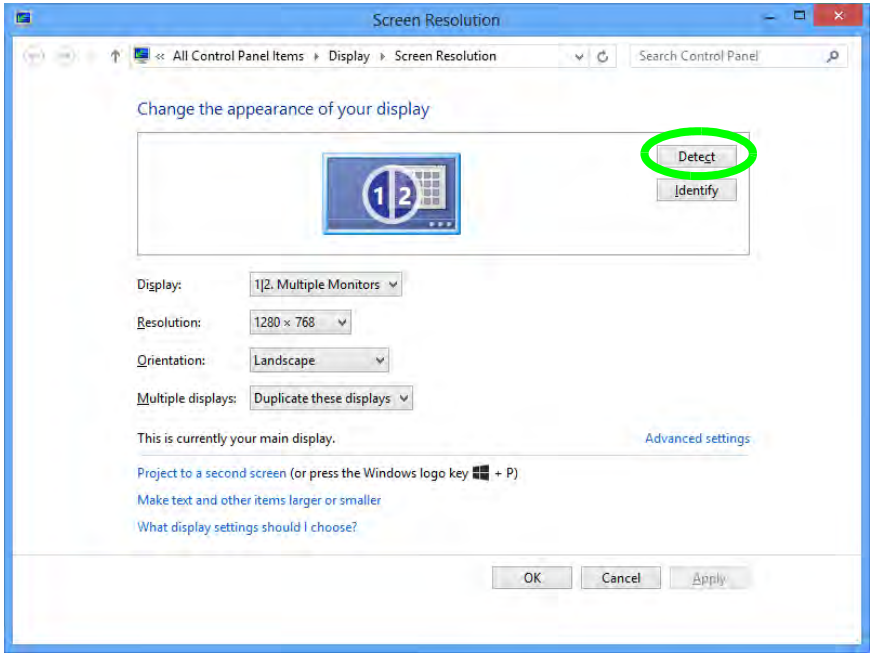


Figure C - 19
Screen Resolution Multiple Displays

5. You can configure the displays from the **Multiple Displays** menu.

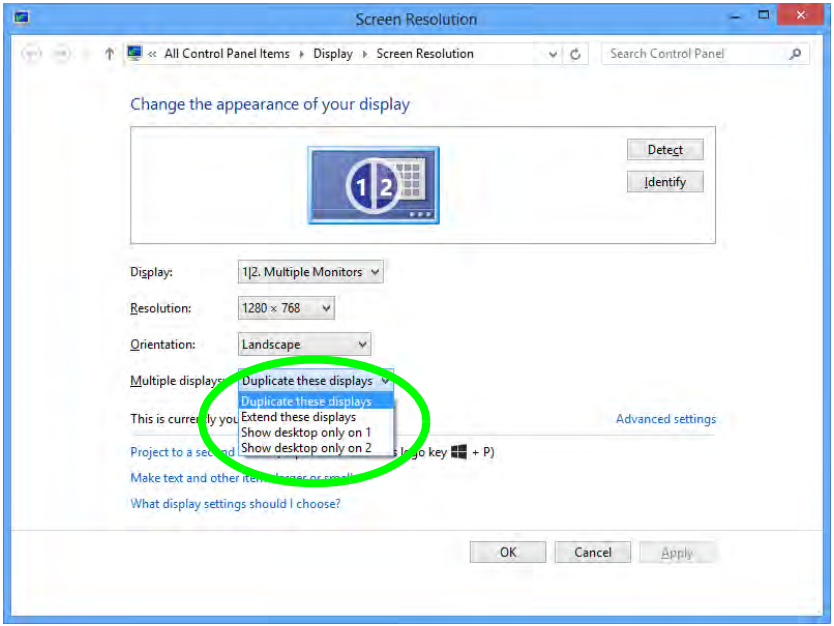


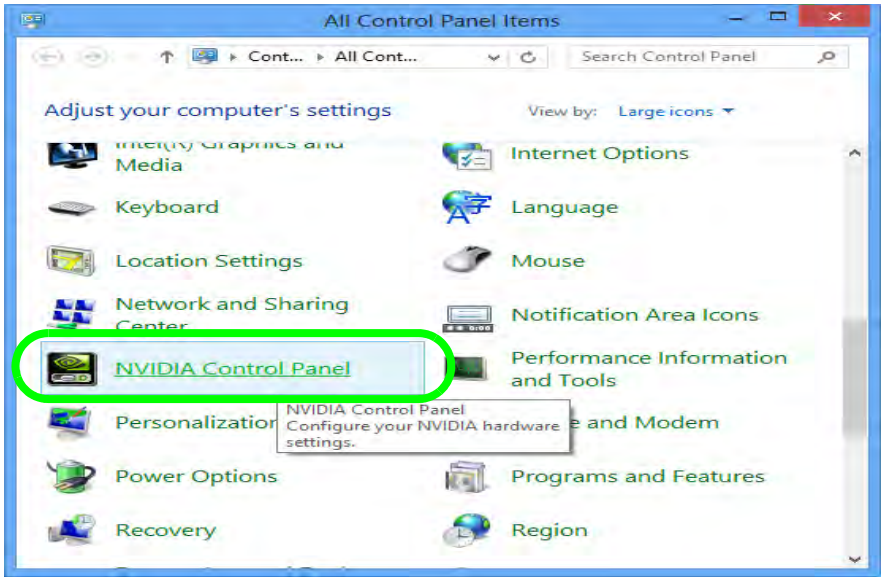
Figure C - 20
Screen Resolution Multiple Display Options

- Duplicate these displays - Shows an exact copy of the main display desktop on the other display(s)
- Extend these displays - Treats both connected displays as **separate** devices
- Show desktop only on 1/2 - Only one of your displays is used.

NVIDIA Control Panel

More advanced video configuration options are provided in the **NVIDIA Control Panel** tab.

1. Go to the **Control Panel**.
2. Double-click **NVIDIA Control Panel** (click to view the control panel in either **Large icons** or **Small icons** if you are in **Category** view).



NVIDIA Control Panel

To access the **GeForce.....** control panel from the desktop; right-click the **desktop**, then click **NVIDIA Control Panel**.

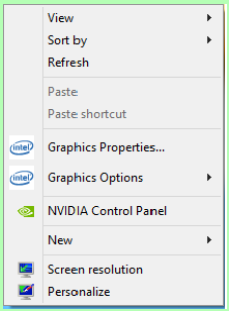


Figure C - 21

NVIDIA Control Panel

C

Navigating the Control Panel

Navigate through the control panels in much the same way as you would a web page. Click on the sub-heading tasks in the left menu (and on the highlighted links) for information. Use the buttons on the top left to go back, forward etc.

The **NVIDIA Control Panel** provides additional video configuration controls and tools which allow quick access to features such as image settings, 3D Settings and video configuration.

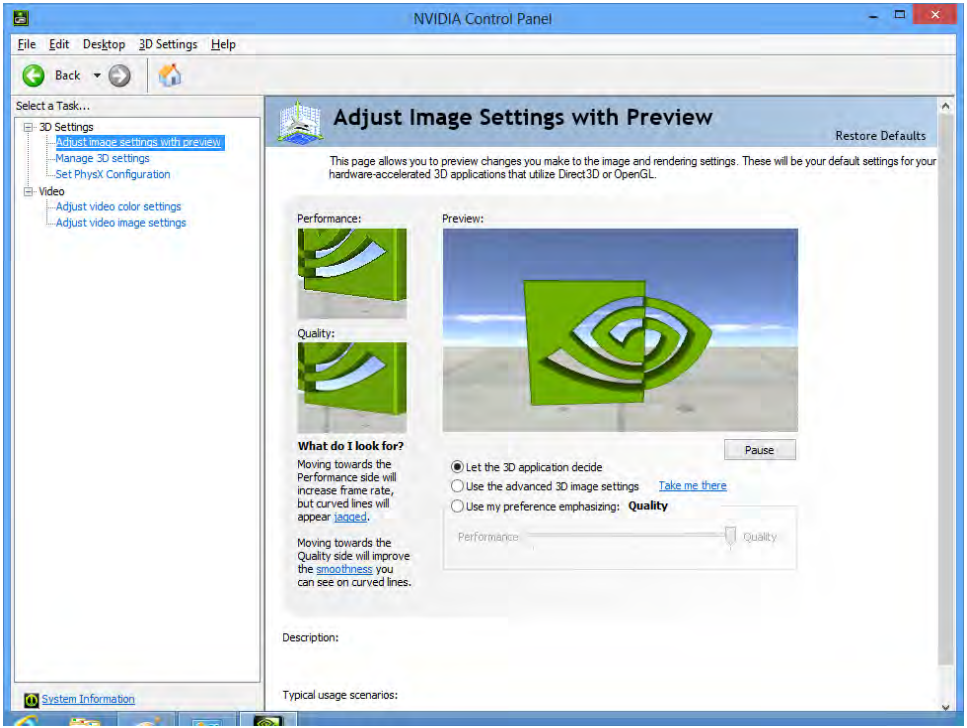

NVIDIA Control Panel
File Edit Desktop 3D Settings Help
Back
Select a Task...
3D Settings
Adjust image settings with preview
Manage 3D settings
Set PhysX Configuration
Video
Adjust video color settings
Adjust video image settings
System Information
Adjust Image Settings with Preview
Restore Defaults
This page allows you to preview changes you make to the image and rendering settings. These will be your default settings for your hardware-accelerated 3D applications that utilize Direct3D or OpenGL.
Performance:
Quality:
Preview:
What do I look for?
Moving towards the Performance side will increase frame rate, but curved lines will appear jagged.
Moving towards the Quality side will improve the smoothness you can see on curved lines.
Pause
Let the 3D application decide
Use the advanced 3D image settings
Take me there
Use my preference emphasizing: Quality
Performance
Quality
Description:
Typical usage scenarios:

Figure C - 22
NVIDIA Control Panel

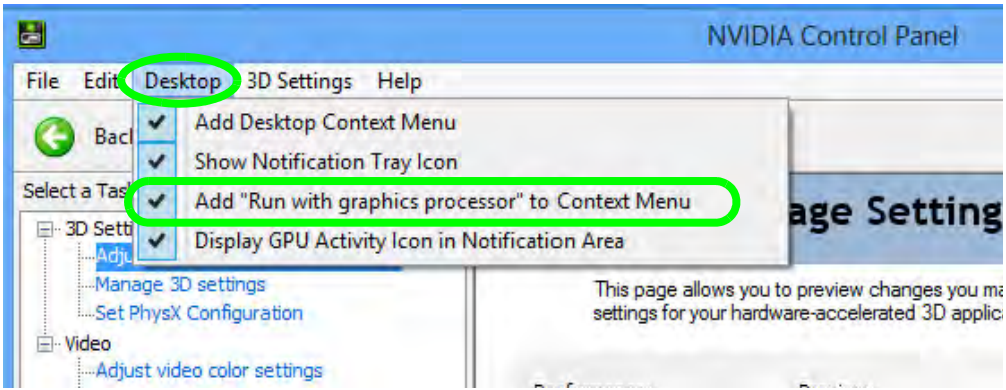
Optimus™ Customization Options

One of the most important aspects of **Nvidia® Optimus™** technology is that it will switch between the integrated GPU and discrete GPU seamlessly and automatically, and does not require any input from the user. However customization options are offered for users who prefer to set their own parameters for GPU usage.

Context Menu

One of the quickest ways to choose which GPU to use for a particular application is by using the "**Run with graphics processor**" in the context menu.

1. Go to the **NVIDIA Control Panel** (see page *C - 27*).
2. Click **Desktop** from the top menu and select **Add "Run with graphics processor" to Context Menu** (it should have a tick alongside it).



Display GPU Activity Icon

Click to enable **Display GPU Activity Icon in the Notification Area** to quickly access the GPU Activity monitor from the taskbar.

Figure C - 23
NVIDIA Control Panel - View

C

iGPU or dGPU

Note the NVIDIA control panel refers to **High-performance NVIDIA processor** (which is the discrete GPU) and **Integrated graphics** (which is the integrated GPU).

3. Close the **NVIDIA Control Panel**.
4. Find the executable file icon of the application you want to run.
5. Right-click the icon and select **Run with graphics processor** from the context menu.
6. Select either **High-performance NVIDIA processor** (dGPU) or **Integrated graphics (iGPU)** to run the program with the selected GPU.

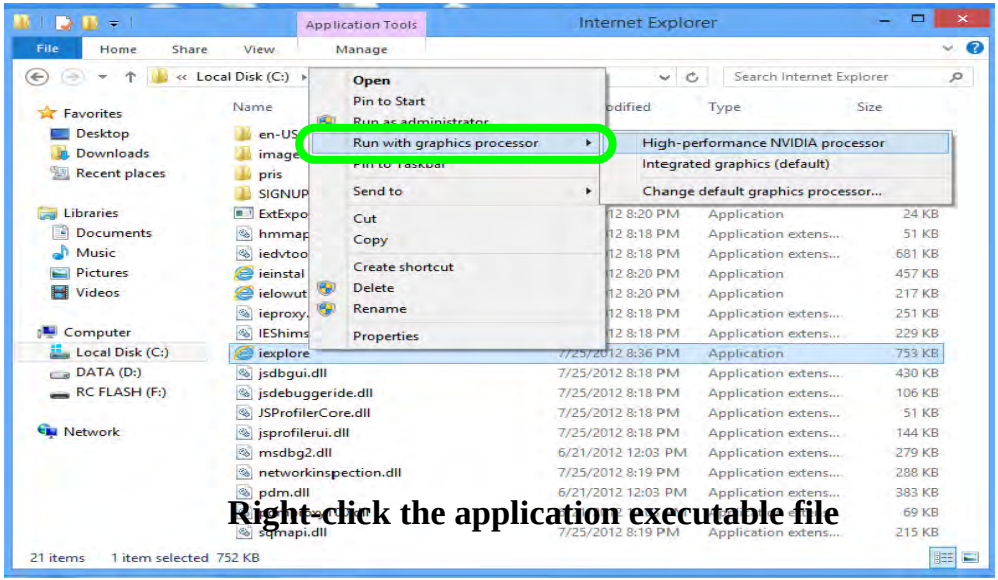


Figure C - 24

Context Menu with Run with graphics processor

Right-click the application executable file

Global Settings

Global settings allows you to set the preferred graphics processor for overall use. Ideally this would be the iGPU for battery life, but this can be set to the dGPU if preferred.

1. Go to the **NVIDIA Control Panel** (see page *C - 27*).
2. Click **Manage 3D Settings (3D Settings)** and select **Global Settings** (tab).
3. Select either **Integrated graphics** (iGPU) or **High performance NVIDIA Processor** (dGPU) from the drop-down menu.
4. Click the **Setting** menu items to select any options required.
5. Click **Apply** to save the settings.

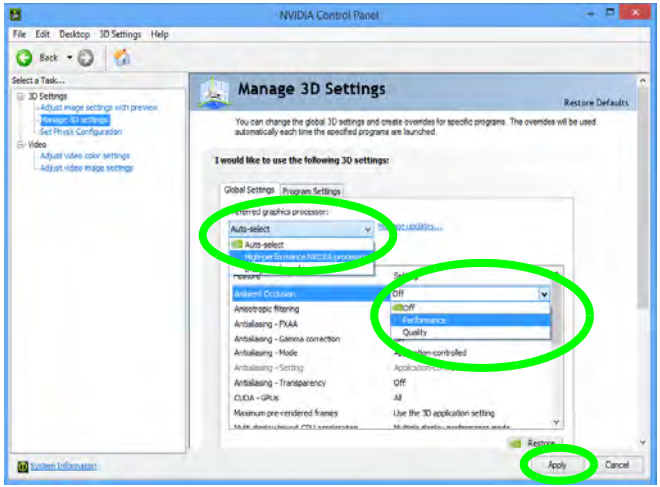


Figure C - 25
Global Settings

Program Settings

Program settings allows you to make specific adjustments for installed applications.

1. Run the **NVIDIA Control Panel** (see page *C - 27*).
2. Click **Manage 3D Settings (3D Settings)** and select **Program Settings** (tab).
3. **Select a program to customize** from the drop-down menu, or click **Add** to add any program that does not appear in the menu.
4. **Select the preferred graphics processor for the program** from the drop-down menu**.**
5. Click the **Setting** menu items to select any options required.
6. Click **Apply** to save the settings.

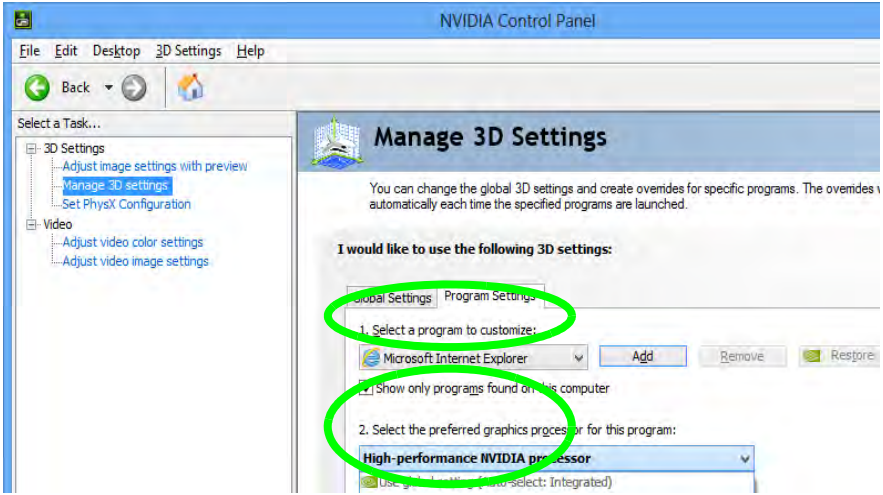

NVIDIA Control Panel
File Edit Desktop 3D Settings Help
Back
Select a Task...
3D Settings
Adjust image settings with preview
Manage 3D settings
Set PhysX Configuration
Video
Adjust video color settings
Adjust video image settings
Manage 3D Settings
You can change the global 3D settings and create overrides for specific programs. The overrides
automatically each time the specified programs are launched.
I would like to use the following 3D settings:
Global Settings
Program Settings
1. Select a program to customize:
Microsoft Internet Explorer
Add
Remove
Restore
Show only programs found on this computer
2. Select the preferred graphics processor for this program:
High-performance NVIDIA processor

Figure C - 26
Program Settings

Set PhysX® Configuration

NVIDIA® PhysX® is a physics engine that can use the GPU to accelerate game and 3D application performance. You can select the GeForce video card or CPU as a PhysX® processor, or configure the computer to auto-select a PhysX® processor (recommended default setting).

1. Go to **NVIDIA Control Panel** (see page ***C - 27***).
2. Click **Set PhysX configuration**.
3. Click to **Select a PhysX processor** from the menu; Auto-select (recommended) is the default setting.
4. Click **Apply** to save the settings.

Figure C - 27
Set PhysX® Configuration

C

Video Settings

Click the sub-menus under **Video** to adjust the **video color** or **image settings**.

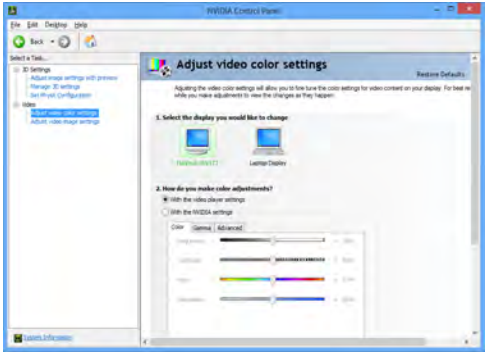
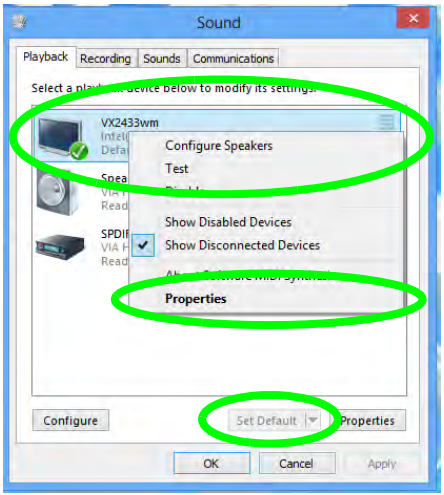


Figure C - 28
Video Settings

HDMI Audio Configuration

HDMI (High-Definition Multimedia Interface) carries both **audio** and video signals. In some cases it will be necessary to go to the **Sound** control panel and manually configure the HDMI audio output as per the instructions below.

1. Go to the **Control Panel**.
2. Click **Sound** (**Hardware and Sound**) and click **Playback** (tab)
3. Depending on your display, the playback device may be selected, however in some cases you may need to select the audio device and click **Set Default** (button).
4. Double-click the device to access the control panel tabs illustrated overleaf.



Volume Adjustment

The sound volume level can be set using the volume control in the ***Settings*** menu in the ***Charms Bar***.

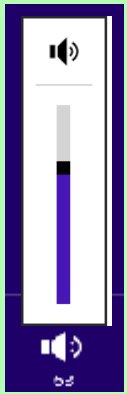


Figure C - 29

Sound - HDMI Device (set Default)

C

5. Adjust the HDMI settings from the control panel tabs.
6. Click **OK** to close the **Sound** control panel.

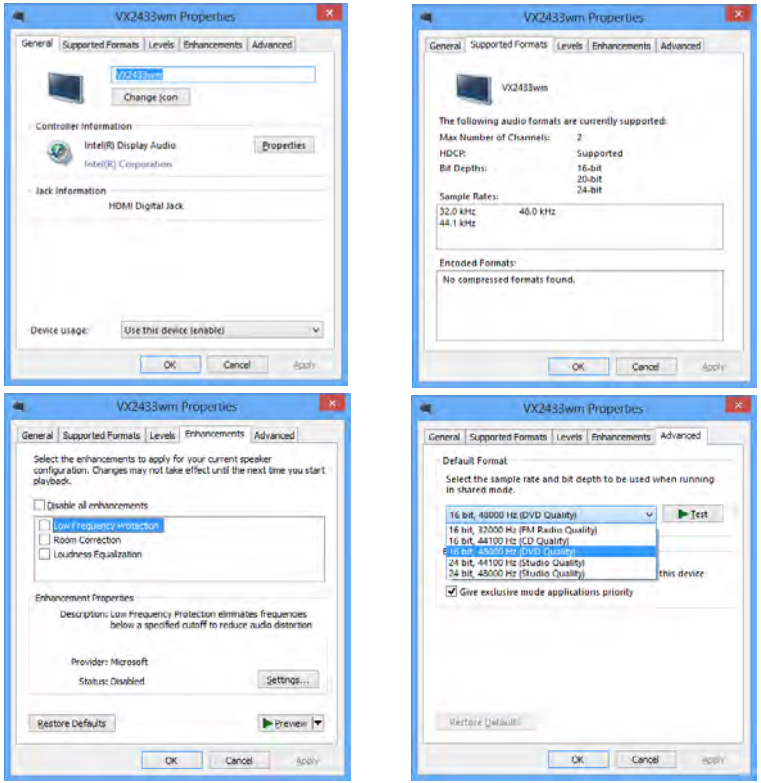


Figure C - 30
HDMI Device Properties

HDMI Notes

- Connect a device with HDMI support to the HDMI-Out port **BEFORE** attempting to play audio/video sources through the device.
- To play audio sources through your external display's (TV or LCD) speakers you will need to go to the audio configuration control panel on the display and configure the audio input accordingly (see your display device manual).

HDMI Video Configuration

1. Connect an HDMI cable from the HDMI-Out port to your external display.
2. Configure your external display as per the instructions in ***"Attaching Other Displays" on page C - 22***.
3. Set up your external display (TV or LCD) for HDMI input (see your display device manual).
4. You can now play video/audio sources through your external display.

Sound Blaster Cinema EQ & HDMI

1. When you connect an HDMI display to the HDMI-Out port, the Sound Blaster Cinema EQ controls will be disabled.
2. A warning box will pop-up and will prompt ***"...Do you want to select another audio device now?"***.
3. Click **No** to continue using the HDMI audio output from your external display (do not attempt to select another audio device when connected to the external HDMI display.

Other Applications

If you are using a third party application to play DVDs etc. from any attached DVD device, you will need to consult the application's documentation to see the appropriate audio configuration (the application must support digital to analog translation).

Appendix D: Specifications

Latest Specification Information

The specifications listed in this Appendix are correct at the time of going to press. Certain items (particularly processor types/ speeds and CD/DVD device types) may be changed, updated or delayed due to the manufacturer's release schedule. Check with your distributor/supplier for details.

Processor

Intel® Core i7-4900MQ (2.8GHz) Mobile Processor
8M L3 Cache, 22nm (22 Nanometer), DDR3L-1600MHz, TDP 47W

Intel® Core i7-4800MQ (2.7GHz) Mobile Processor
6M L3 Cache, 22nm (22 Nanometer), DDR3L-1600MHz, TDP 47W

Intel® Core i7-4700MQ (2.4GHz) Mobile Processor
6M L3 Cache, 22nm (22 Nanometer), DDR3L-1600MHz, TDP 47W

Core Logic

Mobile Intel® HM87 Lynx Point Express Chipset

Display

Model A:
15.6" (39.62cm) HD+ (1600 * 900) / FHD (1920 * 1080), 16:9 Backlit Panel

Model B:
17.3" (43.94cm) HD+ (1600 * 900) / FHD (1920 * 1080), 16:9 Backlit Panel

Memory

Dual Channel **DDR3L**

***Three 204 Pin SO-DIMM Sockets Supporting **DDR3L 1600 MHz** Memory Modules (*real operational frequency depends on the FSB of the processor*)

****Note: Two DIMMs per channel is only supported by Quad-Core CPUs***

Memory Expandable up to 24GB
Compatible with 2GB, 4GB or 8GB Modules

Video Adapter Options

Intel® Integrated GPU and NVIDIA® GeForce Video:
Supports NVIDIA® Optimus Switchable GPU Technology between iGPU and dGPU

Intel® HD Graphics (GPU Type Depends on Processor)
Dynamic Frequency
Intel® Dynamic Video Memory Technology Supporting Shared Memory up to 1.7GB
Supports Microsoft DirectX® 11.1

nVIDIA® GeForce GTX 765M PCIe * 8 Video Chip
2GB GDDR5 Video RAM On Board
Supports Microsoft DirectX® 11.0
NVIDIA PhysX™
GeForce CUDA™ Technology
NVIDIA® Optimus™ Technology

Storage

One 12.7 mm Super Multi/Blu-Ray Combo/Blu-Ray Writer SATA Optical Device Drive (**Factory Option**)

Up to Two (**Factory Option**) Changeable 2.5" 9.5 mm (h) **SATA** (Serial) Hard Disks with RAID Level 0/1 Support

mSATA SSD with SATA Interface

Audio

High Definition Audio
S/PDIF Digital Output
Built-In Microphone
2 Built-In 2W Speakers
Sound Blaster™ Cinema

Keyboard & Pointing Device

Full Size Isolated Winkey Keyboard with Numeric Keypad
Built-In TouchPad (with Multi Gesture Functionality)
GPU Mode Button (UMA/Optimus Mode)

Model A:
One Instant Button for Airplane Mode

Model B:
Three Instant Buttons for Airplane Mode, Mute & Camera On/Off

Interface

One USB 2.0 Port
Three USB 3.0 Ports
One eSATA Port (SATA/USB 3.0 Combo)
One External Monitor Port
One HDMI™-Out (High-Definition Multimedia Interface) Port (with HDCP)
One Microphone-In Jack
One Headphone/Speaker-Out Jack
One S/PDIF Out Jack
One RJ-45 LAN Jack
One DC-In Jack

Card Reader

Embedded Multi-In-1 Push-Push Card Reader
- MMC / RSMMC
- SD / Mini SD / SDHC / SDXC
- MS / MS Pro / MS Duo

Note: Some of these cards require PC adapters that are usually supplied with the cards.

Slots

Two Mini-Card Slots:

Slot 1 for Half Size Mini-Card WLAN Combo Module with PCIe & USB Interfaces:

Slot 2 for Full Size Mini-Card mSATA **SSD** (Solid State Drive) with SATA Interface (**Factory Option**)
OR
For Model A Only
Full Size Mini-Card **3G Module** with USB Interface (**Factory Option**)

Communication

Built-In 10/100/1000Mb Base-TX Ethernet LAN

Intel® Centrino Advanced-N 6235 2*2 (802.11 a/g/n) Half Mini-Card PCIe WLAN + Bluetooth V4.0+HS Combo Module (**Factory Option**)

Intel® Centrino® Wireless-N 2230 2*2 (802.11 b/g/n) Half Mini-Card PCIe WLAN + Bluetooth V4.0+HS Combo Module (**Factory Option**)

(802.11b/g/n) Half Mini-Card PCIe WLAN + Bluetooth V4.0+LE Combo Module (**Factory Option**)

(802.11a/c) Half Mini-Card PCIe WLAN + Bluetooth V4.0+LE Combo Module (**Factory Option**)

802.11b/g/n Half Mini-Card PCIe WLAN Module with PCIe Interface (**Factory Option**)

2.0M HD PC Video Camera Module

See Over

For Model A Only:
UMTS/HSPA+ based **3G Module** with Full Size Mini-Card Interface (**Factory Option**)
Quad-band GSM/GPRS (850 MHz, 900 MHz, 1800 MHz, 1900 MHz)
UMTS WCDMA FDD (2100 MHz)
Note that UMTS modes CAN NOT be used in North America

BIOS

One 48Mb SPI Flash ROM
AMI BIOS

Security

Security (Kensington® Type) Lock Slot
BIOS Password

For Model A Only:
Fingerprint Reader Module (**Factory Option**)

Operating System

Windows® 8

Features

IMR (Injected Molded Resin) LCD Back Covers for some **Model A** designs

Painted Style for some **Model B** designs

Intel® Anti-Theft Technology
Intel® Rapid Start Technology
Intel® Smart Response Technology

Indicators

LED Indicators - Power/Suspend, Battery, HDD/ODD, Airplane Mode, Num Lock, Caps Lock, Scroll Lock, Camera, UMA/dGPU Working

Power

Full Range AC/DC Adapter – AC in 100 - 240V, 50 - 60Hz DC Output 19.5V, 6.15A (**120 Watts**)

Removable 8 Cell Smart Lithium Ion Battery Pack 76.96WH

Power Management

Supports Wake on LAN
Supports Wake on USB
Supports Wake on RTC Alarm (AC Mode Only

Environmental Spec

Temperature
Operating: 5°C - 35°C
Non-Operating: -20°C - 60°C

Relative Humidity
Operating: 20% - 80%
Non-Operating: 10% - 90%

Physical Dimensions & Weight

Model A
374mm (w) * 250mm (d) * 16.3 - 42.7mm (h)
2.7kg with ODD and Battery

Model B:
413mm (w) * 277.5mm (d) * 17.5 - 44mm (h)
3.2kg with ODD and Battery